

REPORT NUMBER: 201U-VER-04-04

**SAFETY COMPLIANCE TESTING FOR FMVSS 201
OCCUPANT PROTECTION IN INTERIOR IMPACT
UPPER INTERIOR HEAD IMPACT PROTECTION**

**NISSAN MOTOR COMPANY, LTD.
2004 NISSAN QUEST 3.5S**

NHTSA NUMBER: C45202

GD TEST NUMBER: 8730-04

**ADVANCED INFORMATION ENGINEERING SERVICES
A GENERAL DYNAMICS COMPANY
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225**



Test Date: January 21, 2004

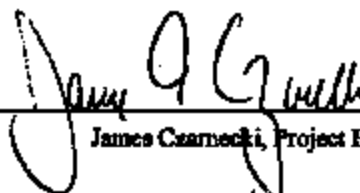
FINAL REPORT

PREPARED FOR:

**U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
Mail Code: NVS-220, Room 6111
400 Seventh Street, SW
Washington, DC 20590**

This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared by:



James Czarniecki, Project Engineer

Approved by:



David J. Travale, Program Manager
Transportation Science Center

Approval Date:

March 9, 2004

FINAL REPORT ACCEPTANCE BY:



NHTSA, Office of Vehicle Safety Compliance

3.23.2004

Date of Report Acceptance

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 201U-VER-04-04		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Final Report of FMVSS 201 Compliance Testing of a 2004 Nissan Quest 3.5S NHTSA No. C45202				5. Report Date / Final Report Date January 21, 2004	
				6. Performing Organization Code VER	
7. Author(s) David J. Travale, Program Manager James Czarniecki, Project Engineer				8. Performing Organization Report No. 8730-04	
9. Performing Organization Name and Address Advanced Information Engineering Services A General Dynamics Company 4455 Genesee Street Buffalo, New York 14225				10. Work Unit No.	
				11. Contract or Grant No. DTNH22-99-C-01005	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance Mail Code: NVS-220 400 Seventh, SW, Room 6111 Washington, D.C. 20590				13. Type of Report and Period Covered Final Report January 2004	
				14. Sponsoring Agency Code NVS-220	
15. Supplementary Notes					
16. Abstract Compliance tests were conducted on the subject vehicle, a 2004 Nissan Quest 3.5S, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure TP-201U-01 for determination of FMVSS 201 compliance. Test failures identified were as follows in the table below:					
Target Point	Horizontal	Vertical	Velocity	HIC	HICd
None	-	-	-	-	-
None	-	-	-	-	-
17. Key Words Compliance Testing Safety Engineering FMVSS 201			18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, DC 20590 Telephone No.: 202-366-4946		
19. Security Classif. (of this report) UNCLASSIFIED		20. Security Classif. (of this page) UNCLASSIFIED		21. No. of Pages	22. Price

Form DOT F1700.7 (8-69)

TABLE OF CONTENTS

SECTION		PAGE
1	PURPOSE AND TEST PROCEDURE	1-1
2	SUMMARY OF UPPER INTERIOR HEAD IMPACTS	2-1
3	SUMMARY OF TEST RESULTS AND DATA PLOTS	3-1
APPENDIX A	PHOTOGRAPHS	A-1
APPENDIX B	PART 572L PERFORMANCE CALIBRATION IN SUPPORT OF VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT PROTECTION IN INTERIOR IMPACT	B-1

LIST OF DATA SHEETS

DATA SHEET	DESCRIPTION	PAGE NO.
2-1	SUMMARY OF UPPER INTERIOR HEAD IMPACT TESTS	2-2
2-2	GENERAL TEST AND VEHICLE PARAMETER DATA	2-3
2-3	TARGET MEASUREMENT REFERENCE SHEET	2-5
2-4	APPROACH ANGLE LIMITS	2-6
2-5	TARGET IMPACT LOCATION ON FMH SUMMARY	2-7

SECTION 1

PURPOSE AND TEST PROCEDURE

This head impact compliance test is part of the FMVSS 201 Upper Interior Head Impact Protection Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-99-C-01005. The purpose of this head impact compliance test was to determine whether the subject vehicle, 2004 Nissan Quest 3.5S, NHTSA No. C45202, meets the performance requirements of FMVSS 201, Occupant Protection in Interior Impact. The compliance test was conducted in accordance with the OVSC Laboratory Test Procedure No. TP-201U-01 dated April_03,1998.

SECTION 2

SUMMARY OF UPPER INTERIOR HEAD IMPACTS

A 2004 Nissan Quest 3.5S, NHTSA No. C45202, was impacted at various locations throughout its upper interior by a 4.54 kg 50th percentile headform. A total of ten (10) impacts were performed in this test series. The target area impacts were chosen by the NHTSA Contracting Officer's Technical Representative (COTR). A summary of test results can be found on data sheet 2-1. The ten (10) area chosen for testing were:

BP4	OP1	BP1	RP1	AP1
BP3	URBP	AP2	SR2B	FH1

The selected impact areas on the test vehicle appeared to comply with the performance requirements of FMVSS 201.

Five Free Motion Headforms (FMH), were used in this test series. All five FMH's were calibrated prior to and after the test series. Calibration information are included in Appendix B. Each FMH weighed 4.54 ± 0.5 kg and has an orthogonal tri-axis accelerometer pack mounted at the center of gravity (c.g.).

A total of three (3) channels of data for each target impact test are recorded on a Keyser-Threde data acquisition system. Data plots, along with still photographs, can be found in Section 3 of this report.

To document each target area impact test, one Weinberger high-speed video camera was placed at various locations to view the headform contact with the selected target area.

DATA SHEET 2-1

SUMMARY OF UPPER INTERIOR HEAD IMPACT TESTS

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SHB CERTIFICATION LABEL)
COLOR:	Smoke

TARGET CODES	Target Coordinates						Approach Angles (degrees)		Velocity (mph)	FMH HIC	HIC(d)
	Driver Side			Passenger Side			Horizontal	Vertical			
	X(mm)	Y(mm)	Z(mm)	X(mm)	Y(mm)	Z(mm)					
AP1	1016.8	-605.2	1237.6	1017.2	601.6	1237.8	117	23	18.75	335.4	570.4
AP2	907.0	-649.0	1151.2	915.4	641.7	1153.2	226	43	18.84	477.4	526.6
AP3	667.0	-690.0	1035.0	665.3	680.1	1027.9	-	-	-	-	-
BP1	1532.9	-522.6	1285.4	1528.1	523.2	1290.1	90	20	18.73	678.6	678.3
BP2	1526.9	-661.1	1067.6	1527.8	653.0	1063.0	-	-	-	-	-
BP3	1473.3	-691.4	1028.6	1466.3	681.0	1031.0	270	-3	23.82	329.6	415.1
BP4	1586.4	-731.5	901.3	1578.8	718.2	892.1	153	-6	23.81	382.8	606.1
PH1	918.1	-501.2	1264.9	906.5	493.6	1269.7	180	50	23.74	917.3	858.3
PH2	884.0	-346.1	1273.9	871.2	330.5	1281.3	-	-	-	-	-
OP1	2675.1	-666.4	1077.4	2674.2	663.8	1073.0	90	5	23.76	860.6	589.3
OP2	2673.6	-657.7	1132.9	2670.9	648.8	1113.6	-	-	-	-	-
RP1	3337.3	-559.9	1234.0	3319.6	537.6	1225.2	Relocated 2 circles		-	-	-
Rel. RP1	3310.3	-526.5	1237.4	3309.5	542.3	1229.1	31	32	18.48	237.8	343.8
RP2	3391.8	-612.7	1128.2	3348.2	643.1	1135.0	-	-	-	-	-
RH	3252.8	-414.2	1304.0	3246.0	419.6	1311.1	-	-	-	-	-
SR1	1169.6	-564.7	1301.9	1169.2	569.0	1301.8	-	-	-	-	-
SR2A	1321.0	-558.5	1323.7	1235.8	564.3	1314.8	Relocated 1 circle		-	-	-
Rel. SR2A	-	-	-	1172.1	562.6	1280.9	-	-	-	-	-
SR2B	1239.1	-559.9	1311.3	1318.1	551.2	1309.0	Relocated 1 circle		-	-	-
Rel. SR2B	-	-	-	1237.8	554.4	1292.4	270	28	18.63	338	436.3
SB3	2204.2	-532.4	1334.1	2203.6	540.6	1338.7	-	-	-	-	-
SD	2108.8	-537.5	1347.3	2105.2	541.3	1353.1	-	-	-	-	-
URAP	1209.6	-498.2	1333.0	1197.9	462.2	1338.3	-	-	-	-	-
URBP	1532.3	-447.7	1310.1	1529.0	449.2	1319.6	270	50	18.65	426.5	488.2
URCP	2652.7	-443.4	1383.1	2678.5	451.5	1390.9	-	-	-	-	-
URRP	3133.7	-457.2	1334.5	3127.4	466.6	1341.8	-	-	-	-	-

*HIC(d)=0.73446(Free Motion Headform HIC)+166.4

Nissan's reference point for x,y,z coordinate correlation (Front Seat Outboard belt hole x=640.0 mm, y=-972.5 mm, and z=95.8 mm) to General Dynamic's coordinate system.

DATA SHEET 2-2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:									
Year/Make/Model/Body Style:				2004 Nissan Quest 3.5S					
VIN:				5N1BV28U04N316161					
Month & Year of Manufacture:				09/03 (SEE CERTIFICATION LABEL)					
Vehicle Body Color:				Smoke					
Engine Data:	6	Cylinders:	-	CID:	3.5	Liters:	213	cc	
Engine Placement:	x		Longitudinal;	or	-		Lateral		
Transmission:	4	Speed:	-	Manual;	x	Automatic;	x	Overdrive	
Final Drive:	-	Rear Wheel Drive;	x	Front Wheel Drive;	-	Four Wheel Drive			
Odometer Reading:	29		km						
Options:	x	A/C;	x	Power Steering;	x	Pwr.Brakes;	x	Pwr. Windows	
Interior Trim Information:									
1. Adjustable seat belt anchorages located on both sides of the vehicles BP2 and OP1 targets									
2. Non-adjustable seat belt anchorages located on both sides of the vehicles RP2 targets.									
3. Grab handles located on all front and rear outboard seating positions except the drivers position.									

DATA FROM TIRE PLACARD:									
Tire Pressure (at capacity);				240		kPa FRONT			
				240		kPa REAR			
Recommended Tire Size:				P225/65R16					
Tires on Test Vehicle:		P225/65R16		Manufacturer:		Michelin			
Vehicle Capacity Data:									
Number of Occupants:	2	Front;	2	Rear;	3	3rd Seat;	7	Total	
Type of Front Seats:	x	Bucket;	-	Bench;	-	Split Bench			
Type of Front Seat Back:	-	Fixed;	x	Adjustable with	x	Lever or	-	Knob	
Vehicle Capacity Weight (VCW) =				546		kg (A)			
No. of Occupants x 68 kg. =				476		kg (B)			
Rated Cargo/Luggage Weight (RCLW) =				70		kg (A-B) Max. RCLW = 136 kg.			

DATA SHEET 2-2

GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:					
Left Front	=	559.0	kg	Left Rear	= 407.0 kg
Right Front	=	572.5	kg	Right Rear	= 397.0 kg
TOTAL FRONT	=	1131.5	kg	TOTAL REAR	= 804.0 kg
% of Total Weight	=	58.5	%	% of Total Weight	= 41.5 %
TOTAL WEIGHT	=	1935.5	kg		

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:		
Total Test Vehicle Delivered Weight =	1935.5	kg (A)
+ Rated Cargo/Luggage Weight =	70.0	kg (B) Max. RCLW = 136 kg
TEST VEHICLE TARGET WEIGHT =	2005.5	kg (A+B)

WEIGHT OF TEST VEHICLE (FULLY LOADED):					
Left Front	=	547.0	kg	Left Rear	= 443.0 kg
Right Front	=	568.0	kg	Right Rear	= 441.0 kg
TOTAL FRONT	=	1115.0	kg	TOTAL REAR	= 884.0 kg
% of Total Weight	=	55.8	%	% of Total Weight	= 44.2 %
TOTAL TEST WEIGHT	=	1999.0			
Weight of vehicle secured in test vehicles cargo area	=	70.0	kg		

TEST VEHICLE ATTITUDE (all dimensions in millimeters):				
AS DELIVERED:	Left Front	746	Left Rear	768
	Right Front	745	Right Rear	767
FULLY LOADED:	Left Front	747	Left Rear	755
	Right Front	743	Right Rear	753
Test Vehicle Wheelbase:		3150		millimeters

TEST VEHICLE PITCH AND ROLL ANGLES:				
AS DELIVERED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	0.41	Front Bumper	0.31
	Right Door Sill	0.71	Rear Bumper	0.21
FULLY LOADED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	0.11	Front Bumper	0.41
	Right Door Sill	0.41	Rear Bumper	0.31
AS TESTED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	0.41	Front Bumper	0.31
	Right Door Sill	0.61	Rear Bumper	0.21

**DATA SHEET 2-3
TARGET MEASUREMENT REFERENCE SHEET**

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Smoke

Measurements	Description	Left Side	Right Side
M	Seat fore / Aft travel (Front seats)	240	240
T°	Horizontal angle (CG-F1 (Left seat) to (Right A-pillar))	113	-
A1°	360° - T°	247	-
WE°	Horizontal angle (CG-F2 (Left seat) to (Left A-pillar))	200	-
A2°	A2° = W°	200	-
U°	Horizontal angle (CG-F2 (Left seat) to (Left B-pillar))	273	-
B1°	B1° = U°	273	-
V°	Horizontal angle (CG-FR (Left seat) to (Right B-pillar))	196	-
B2°	B2° = V°	196	-
W°	Horizontal angle (CG-F2 (Right seat) to (Right A-pillar))	-	161
A1°	A1° (Right) = W° (Right)	-	161
T°	Horizontal angle (CG-F1 (Right seat) to (Left A-pillar))	-	247
A2°	360° - T° (Right)	-	113
V°	Horizontal angle (CG-FR (Right seat) to (Right B-pillar))	-	164
B1°	B1° (Right) = V° (Right)	-	164
U°	Horizontal angle (CG-F2 (Right seat) to (Right B-pillar))	-	84
B2°	B2° (Right) = U° (Right)	-	84
J	A-pillar ((Plane 3) - (Plane 5))	418	420
J/2	J ÷ 2	209	210
D1	Upper Roof ((Plane A) - (Plane B))	2780	
D1/2	D1 ÷ 2	1394	
D2	Upper Roof ((Plane C) - (Plane D))	1336	
D2/2	D2 ÷ 2	668	
.35D1	.35 x D1	973.0	
.35D2	.35 x D2	467.6	
N	B-pillar ((BPR) - (lowest point on the daylight opening forward of B-pillar))	518	524
N/2	B-pillar ((BP3) - (lowest point on the daylight opening forward of B-pillar))	259	262
N/4	B-pillar ((BP3) - (lowest point on the daylight opening forward of B-pillar))	129.5	131
Q	Other-pillar ((OPR) - (lowest point on the daylight opening forward of O-pillar))	464	464
Q/2	Other-pillar ((OP2) - (lowest point on the daylight opening forward of O-pillar))	232	232
D	((Corner of roof area, point 7) - (roof area center, point M))	1089	1084
3D/7	(3 x D) ÷ 7	467	465
MM	Widest door opening of slider door	1000	1000
M	MM ÷ 2	500	500

DATA SHEET 2-4

APPROACH ANGLE LIMITS

Left Side					Right Side				
Target Code	Horizontal Angles (deg.)		Vertical Angles (deg.)		Target Code	Horizontal Angles (deg.)		Vertical Angles (deg.)	
	Minimum	Maximum	Minimum	Maximum		Minimum	Maximum	Minimum	Maximum
AP1	200	247	-5	23	AP1	113	161	-5	23
AP2	200	247	-5	44	AP2	113	161	-5	44
AP3	200	247	-5	43	AP3	113	161	-5	43
BP1	196	275	-10	20	BP1	84	164	-10	20
BP2	ANY		0	8	BP2	ANY		0	8
BP3	196	275	-10	-3	BP3	84	164	-10	-3
BP4	196	275	-10	-6	BP4	84	164	-10	-6
OP1	ANY		0	6	OP1	ANY		0	6
OP2	270		-10	1	OP2	90		-10	1
RP1	370	345	-10	32	RP1	15	90	-10	32
RP2	ANY		0	1	RP2	ANY		0	1
PH1	180		0	50	PH1	180		0	50
PH2	180		0	50	PH2	180		0	50
RH	360		0	50	RH	0		0	50
SR1	270		0	28	SR1	90		0	43
SR2A	270		0	28	SR2A	90		0	43
SR2B	270		0	28	SR2B	90		0	31
SR3	270		0	50	SR3	90		0	50
SD	270		0	41	SD	90		0	41
URAP	ANY		0	50	URAP	ANY		0	50
URBP	ANY		0	50	URBP	ANY		0	50
UROF	ANY		0	43	UROF	ANY		0	43
URRP	ANY		0	42	URRP	ANY		0	42

Note: BP2, OP1 and RP2 target locations - Seat belt anchorages

DATA SHEET 2-5

SUMMARY TARGET IMPACT LOCATION ON FMH

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Smoke



K RIGHT SIDE OF FACE

TARGET	Distance Above Point O (mm)	Distance Over From Pt. O (mm)
BP4	14	13 to the right
OP1	11	7 to the left
BP1	68	5 to the right
RP1	40	7 to the right
AP1	12	22 to the right
BP3	19	12 to the left
URBP	14	5 to the right
AP2	18	4 to the right
SR2B	27	8 to the left
FH1	22	7 to the left

SECTION 3
SUMMARY OF TEST RESULTS AND DATA PLOTS

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	01
Test Date:	January 20, 2004
Target Location:	B-Pillar
Target Code:	BP4
Horizontal Impact Angle:	133°
Vertical Impact Angle:	-6°
Ambient Temperature:	24°C
Relative Humidity:	17%
Time of Impact:	10:30
Headform Number:	0062

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	13	x	mm right	mm left
On Centerline	14		mm up	



POST-IMPACT BP4 HEADFORM

Free Motion HIC	582.8
HIC(d)	606.1
Impact Velocity (kph)	23.81
HIC T1 (msec)	1.6
HIC T2 (msec)	9.6

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - BP4

FMH Headform 0062

Location: BP4

Test Date: January 20, 2004

Work File: BP4

TEST RESULTS

Lab Temperature: 24 C

HICd: 606.1

Lab Humidity: 17 %

HIC (36ms): 582.8

Velocity at Impact: 23.81 KPH

t1: 1.6 msec

t2: 9.6 msec

Free Flight Distance: 211.86 mm

Duration: 8.1 msec

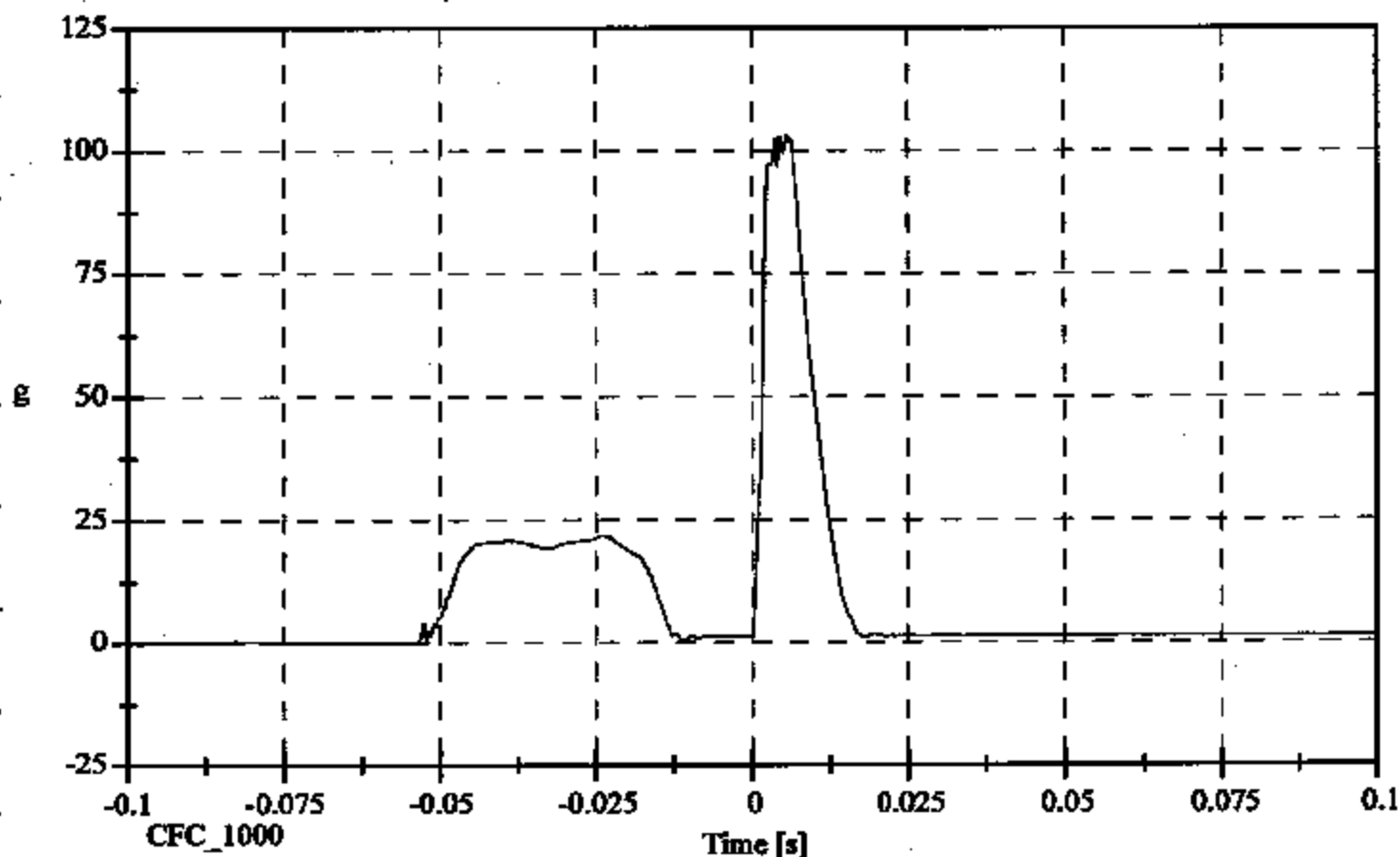
Average Acceleration: 8.5 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 103.2 [g] at 0.005 [s]

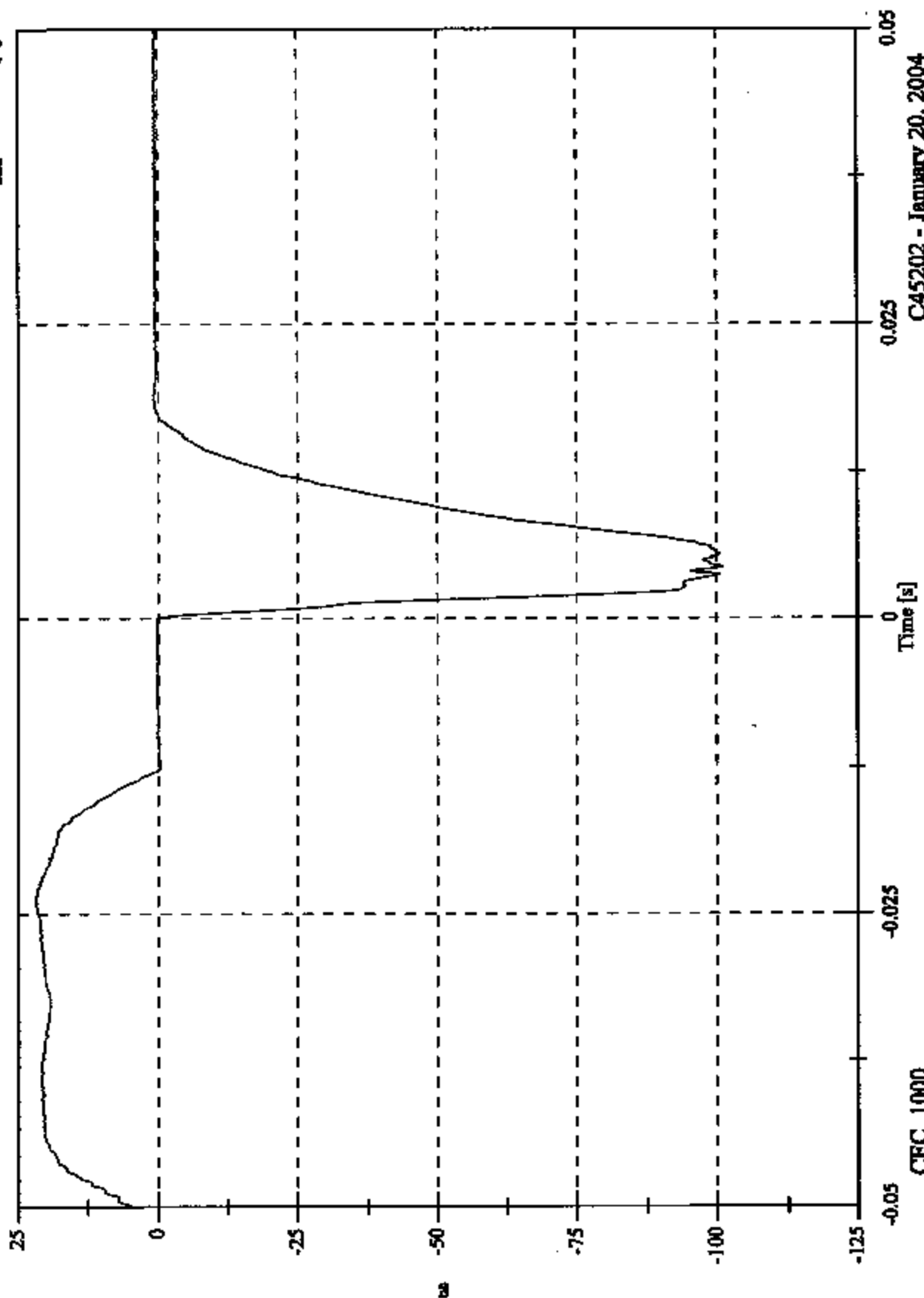
Min: -0.0 [g] at -0.099 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 21.8 [g] at -0.024 [s]
Min: -101.3 [g] at 0.004 [s]



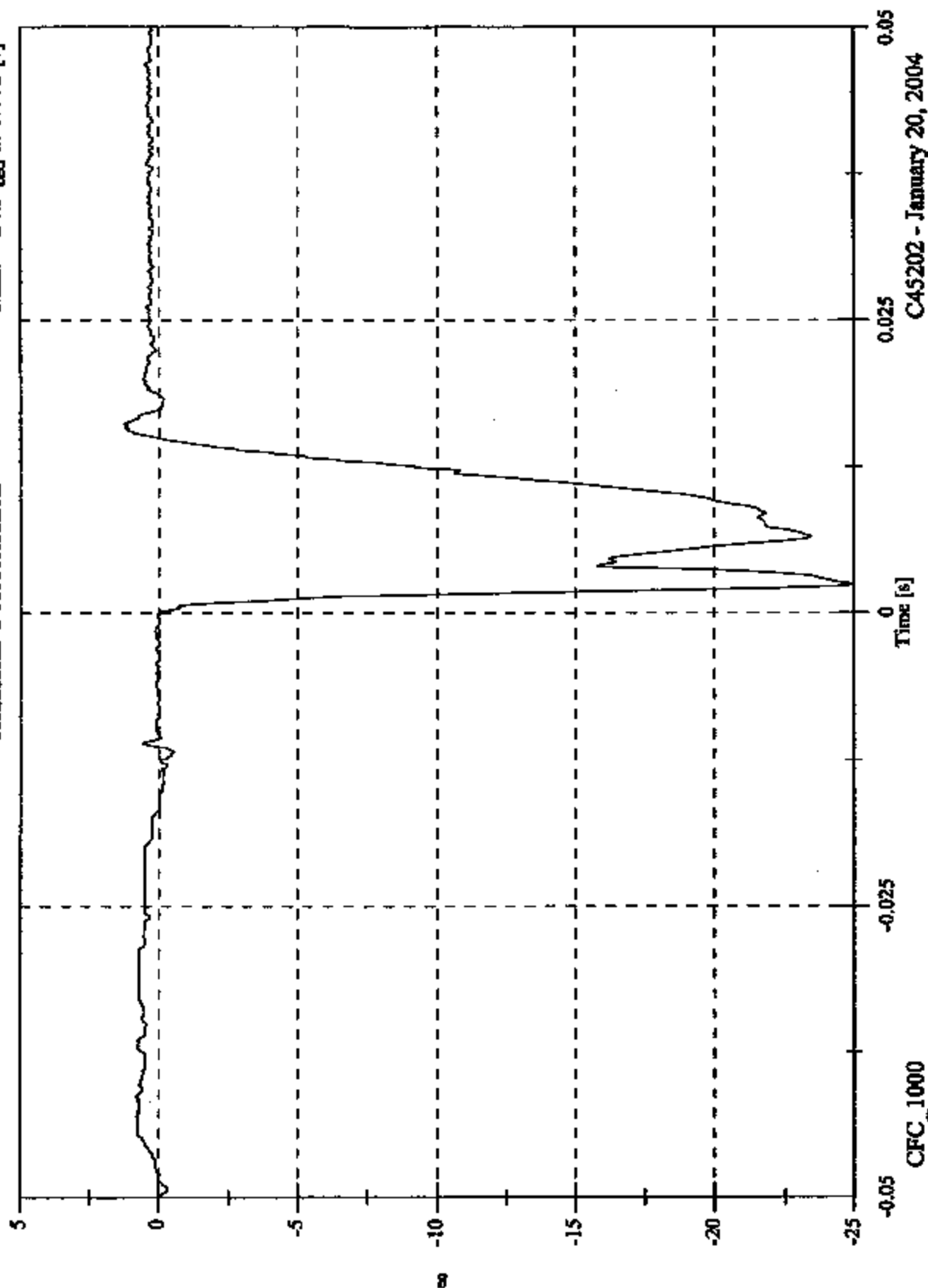
CFC_1000

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 1.3 [g] at 0.016 [s]

Min: -24.9 [g] at 0.002 [s]



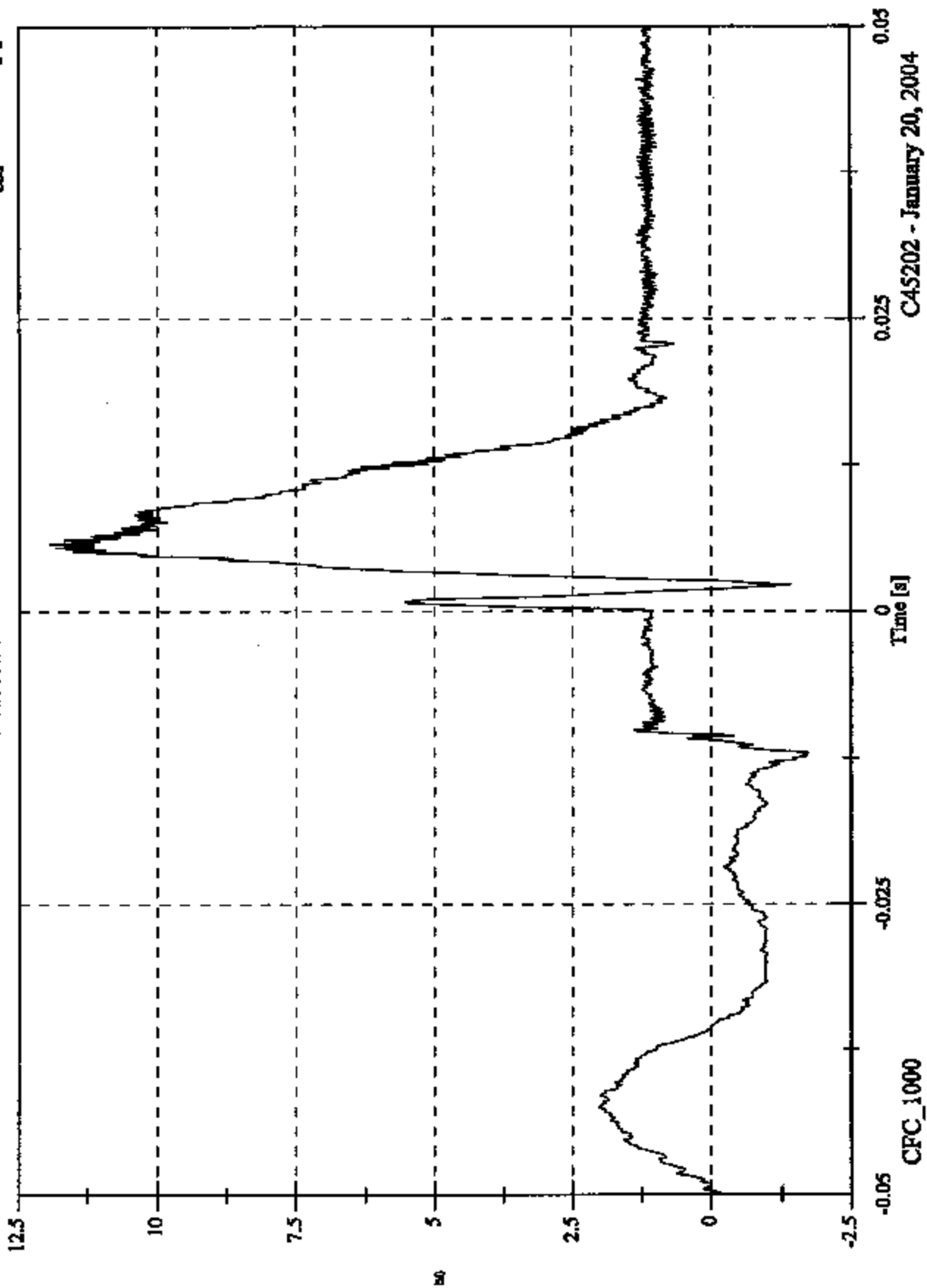
C45202 - January 20, 2004

C45202 Passenger Side BP4 Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Z Acceleration

Max: 11.9 [g] at 0.006 [s]
Min: -1.7 [g] at -0.012 [s]

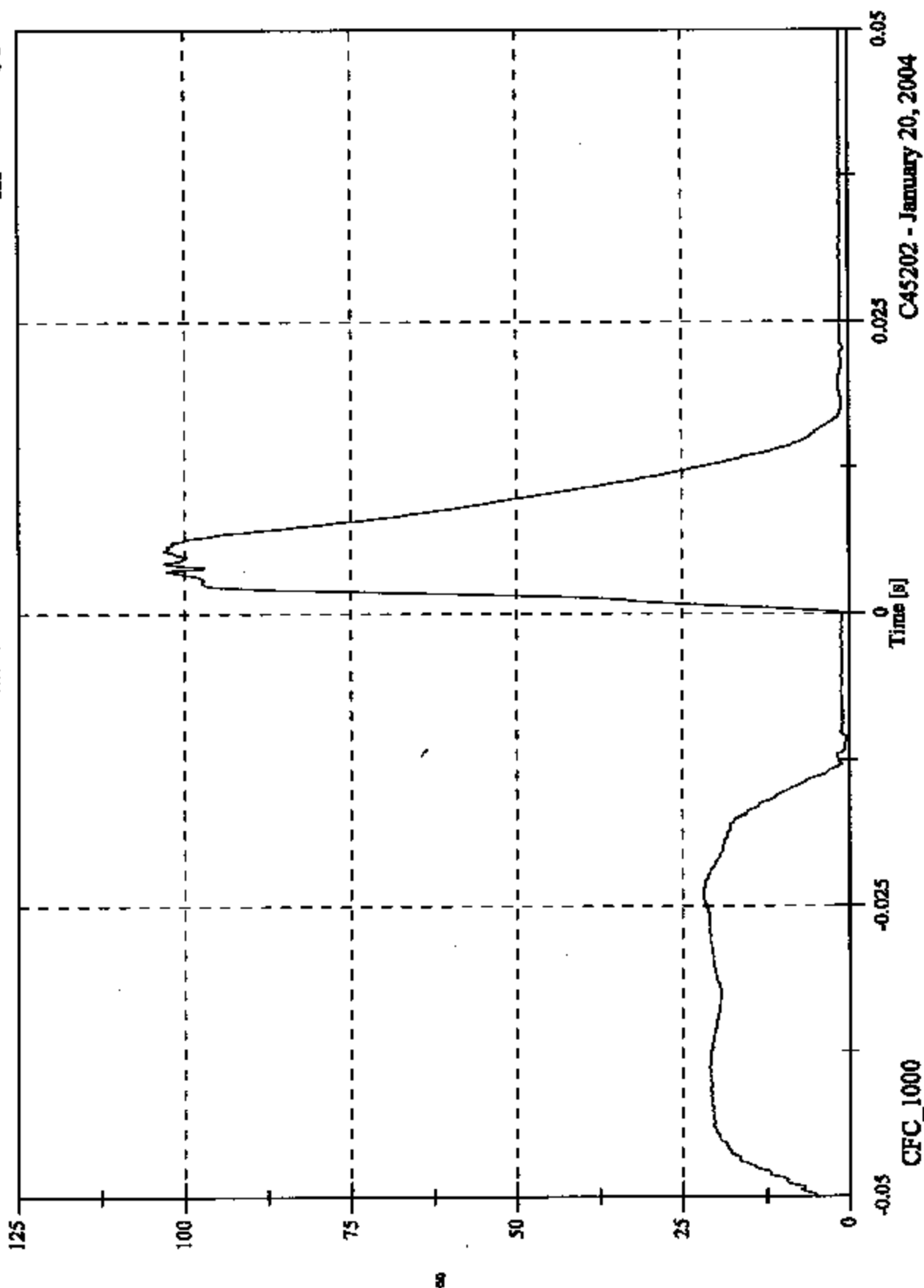


C45202 Passenger Side BP4 Impact Plot #3

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 103.2 [g] at 0.005 [s]
Min: 0.1 [g] at -0.011 [s]



CFC_1000

Time [s]

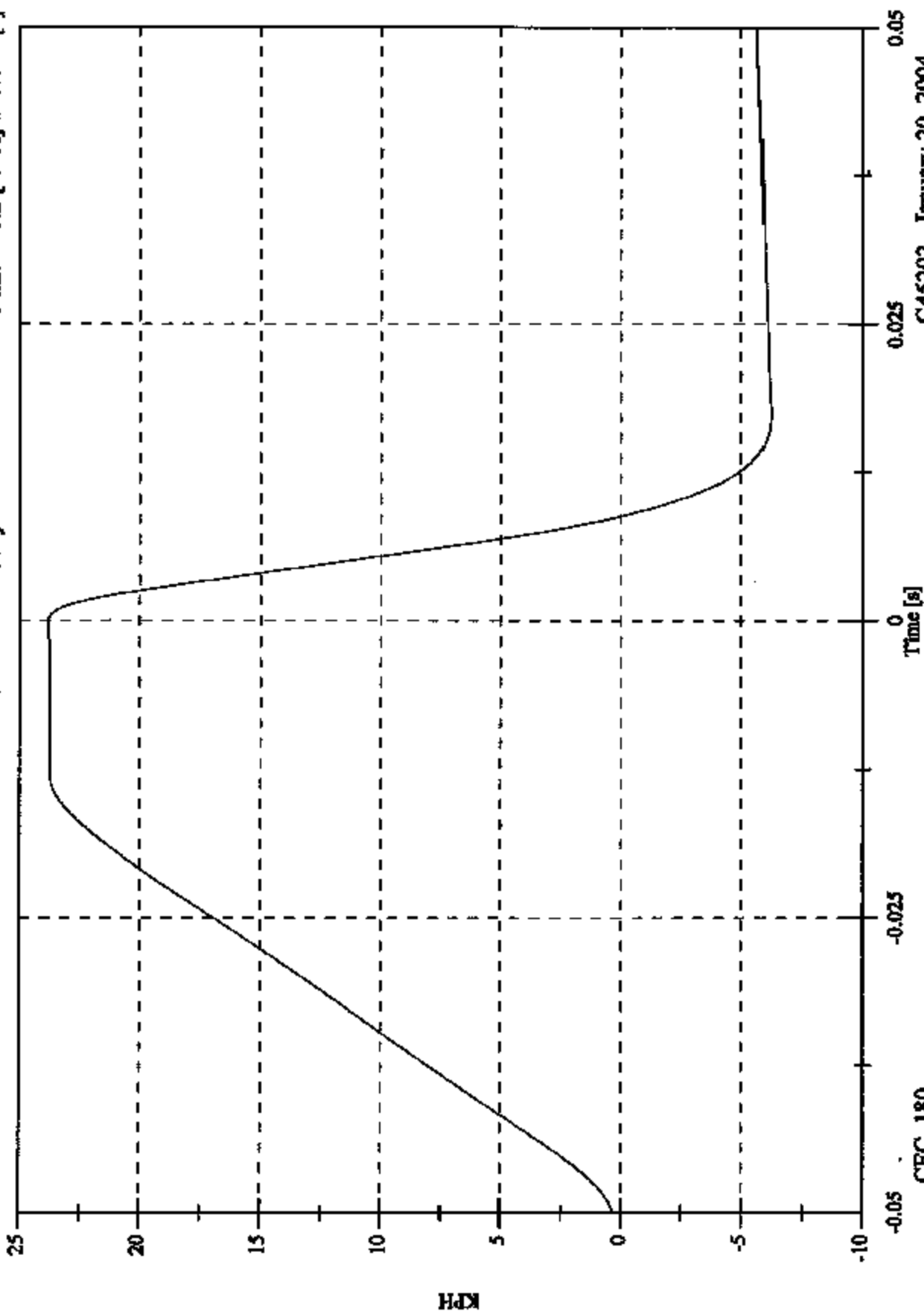
C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 23.8 [KPH] at -0.000 [s]

Min: -6.2 [KPH] at 0.017 [s]

Headform Velocity



CFC_180

-0.025

Time [s]

0.025

C45202 - January 20, 2004



AM/88 2010 235202
OF MISSION QUEST
THE TEST
JUN 100 LION 6

FOR INFORMATION

FMVSS 201U C45202
CA NISSAN QUEST 20 JAN 04
POST TEST
VER 100 HOR -6 BPA

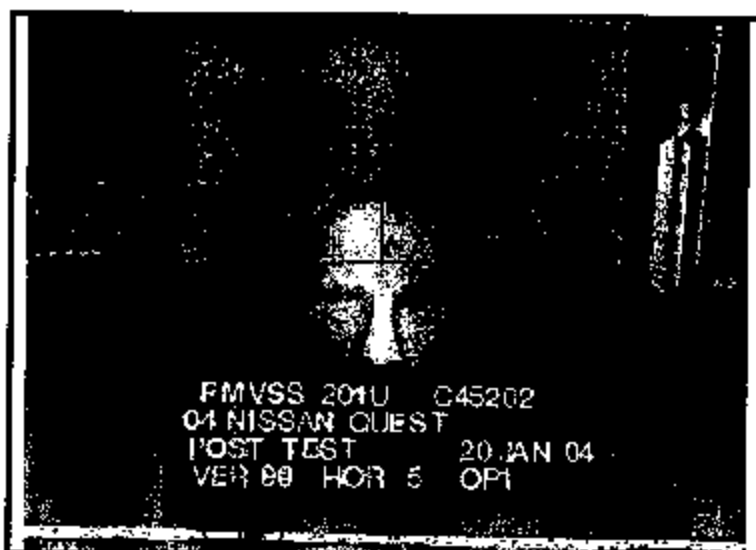
POSTIMPACT BPA

270-04

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	02
Test Date:	January 20, 2004
Target Location:	Other Pillar
Target Code:	OP1
Horizontal Impact Angle:	90°
Vertical Impact Angle:	5°
Ambient Temperature:	24°C
Relative Humidity:	17%
Time of Impact:	10:50
Headform Number:	1253

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	7	mm right	x mm left
On Centerline	11	mm up	



POST-IMPACT OP1 HEADFORM

Free Motion HIC	560.6
HIC(d)	589.3
Impact Velocity (kph)	23.76
HIC T1 (msec)	1.4
HIC T2 (msec)	9.4

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - OP1

FMH Headform 1255

Location: OP1

Test Date: January 20, 2004

Work File: OP1

TEST RESULTS

Lab Temperature: 24 C

HICd: 589.3

Lab Humidity: 17 %

HIC (36ms): 560.6

Velocity at Impact: 23.76 KPH

t1: 1.4 msec

t2: 9.4 msec

Free Flight Distance: 209.01 mm

Duration: 7.9 msec

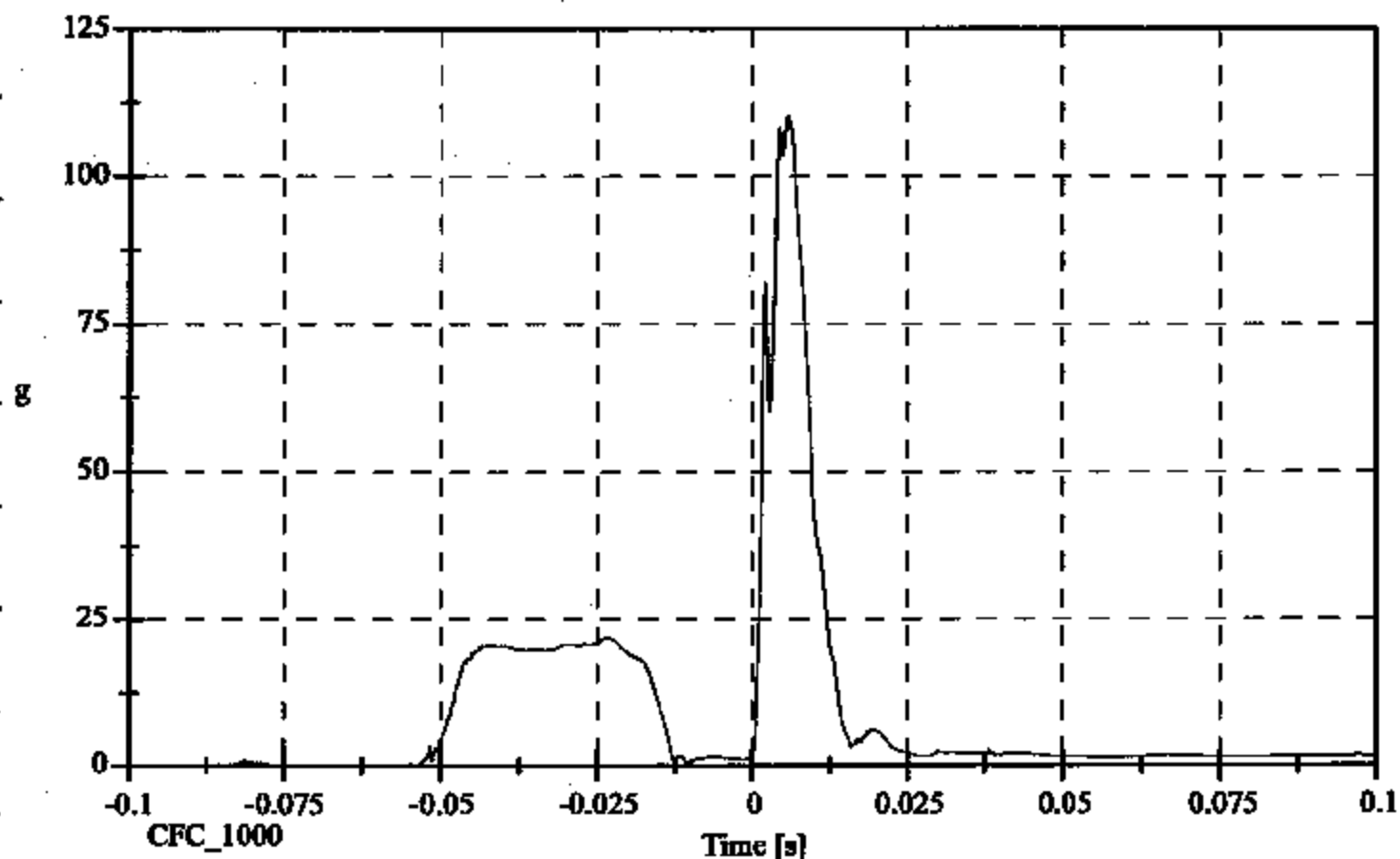
Average Acceleration: 8.6 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 110.2 [g] at 0.006 [s]

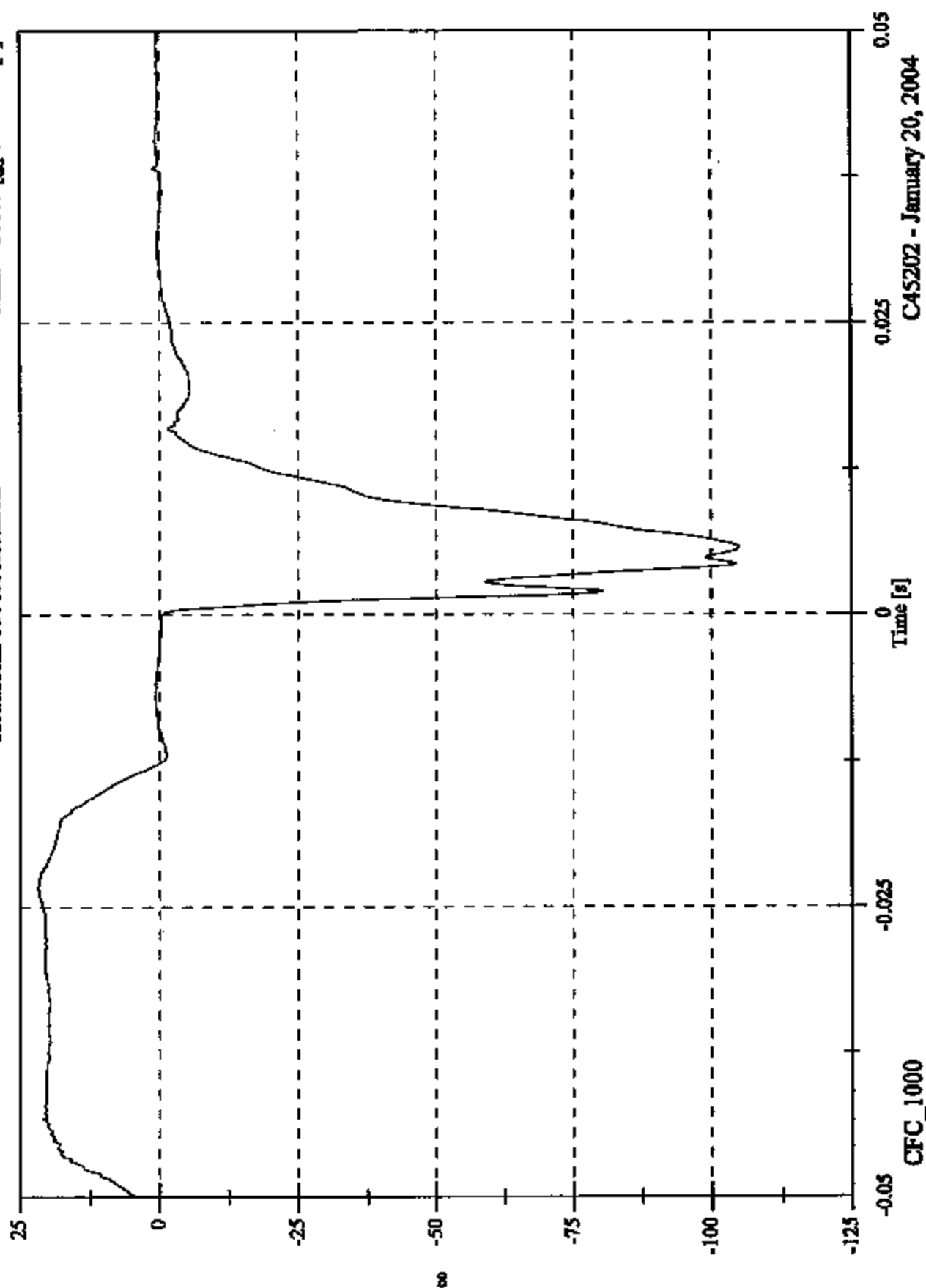
Min: 0.0 [g] at -0.071 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 21.8 [g] at -0.023 [s]
Min: -105.0 [g] at 0.006 [s]

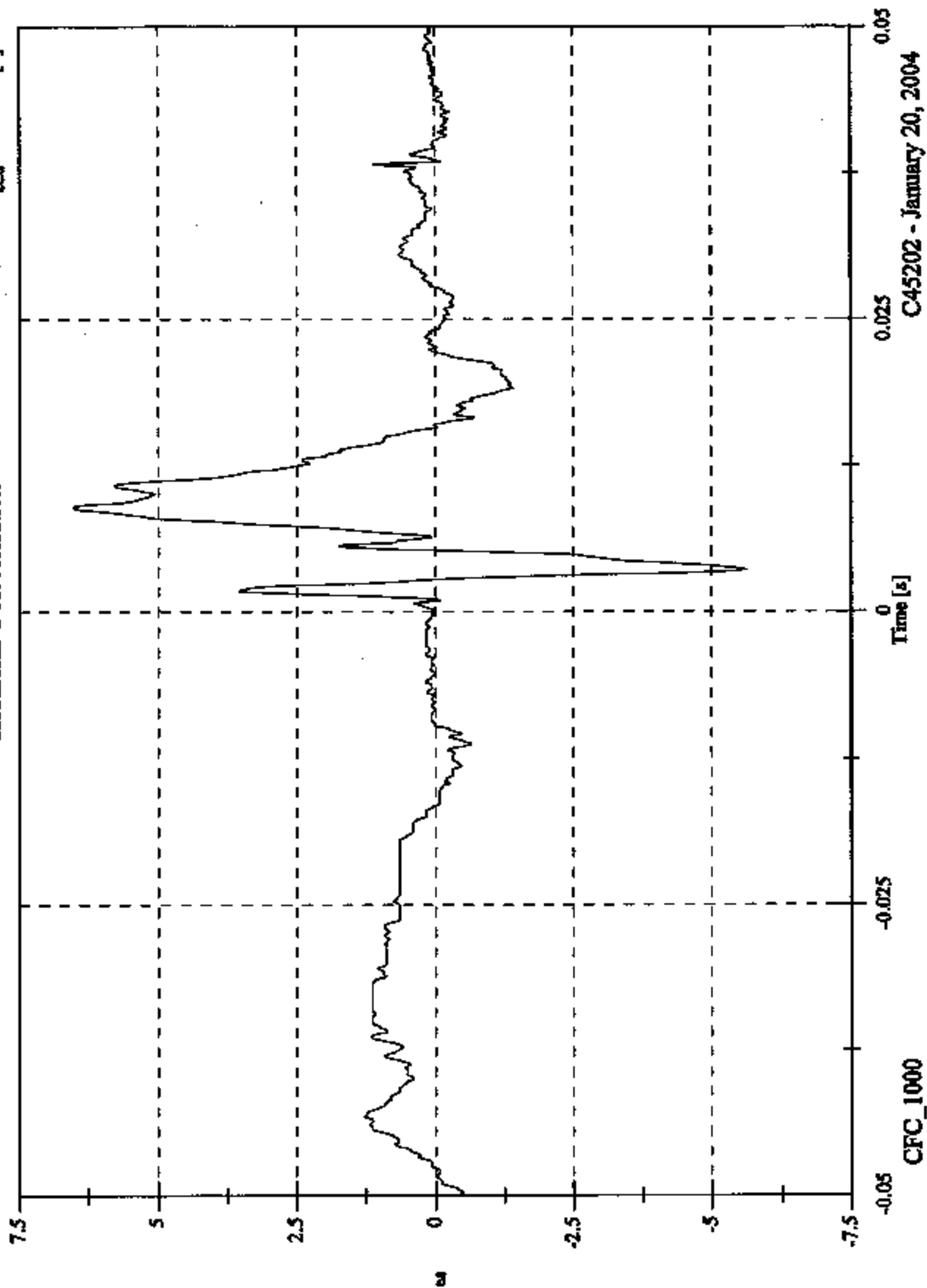


CFC_1000

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 6.5 [g] at 0.009 [s]
Min: -5.6 [g] at 0.004 [s]

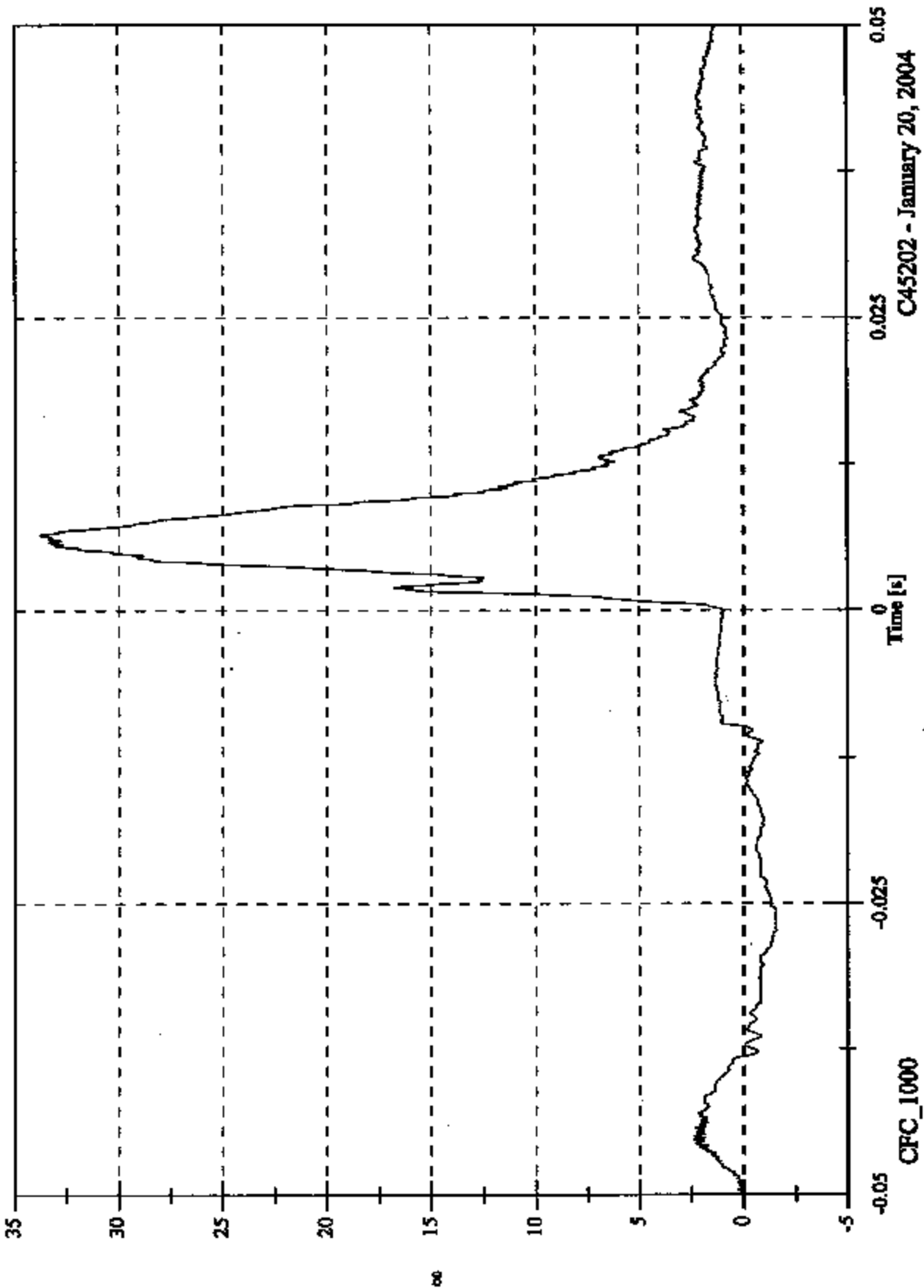


C45202 Passenger Side OP1 Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Z Acceleration

Max: 33.8 [g] at 0.006 [s]
Min: -1.5 [g] at -0.026 [s]

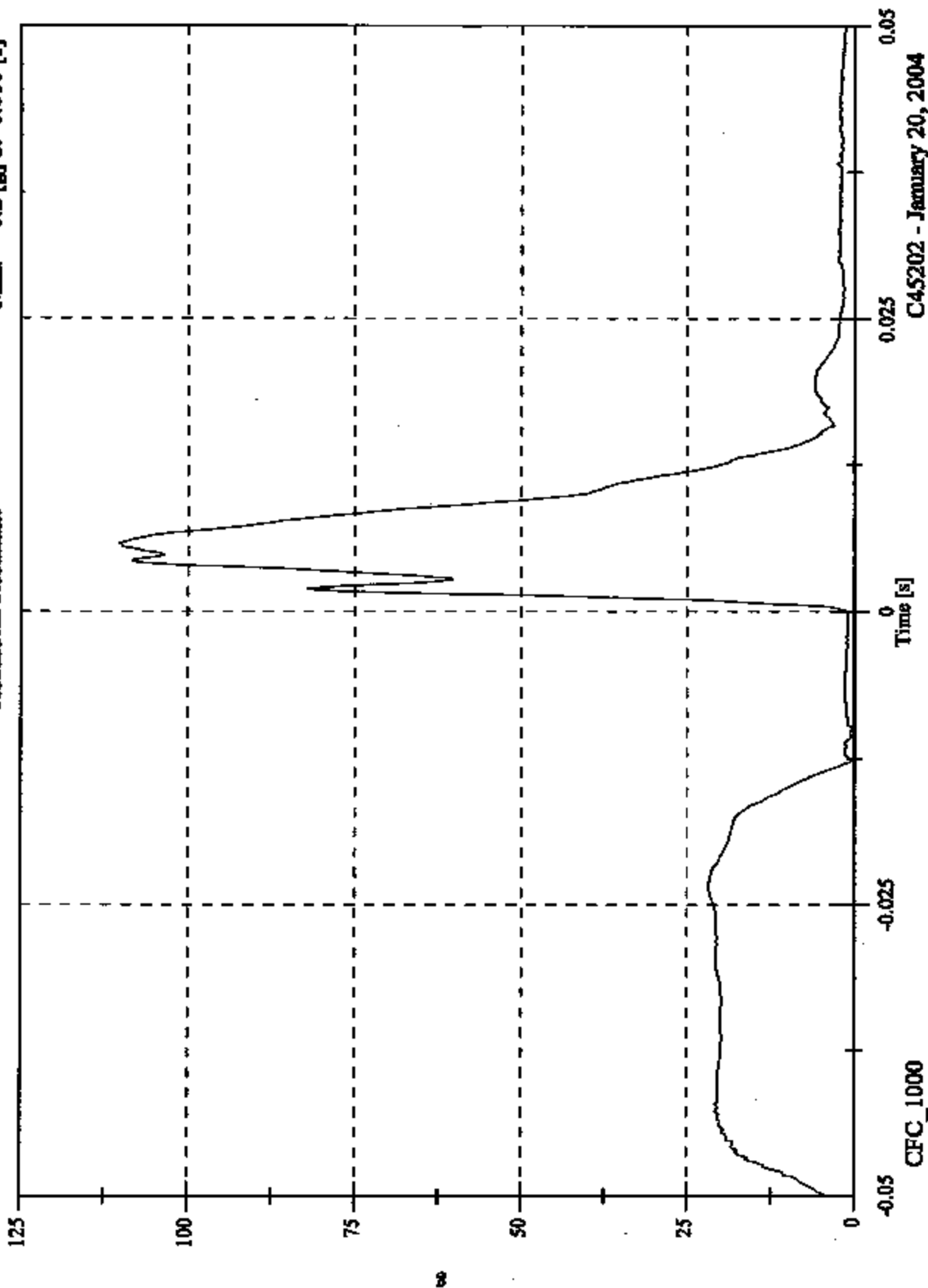


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 110.2 [g] at 0.006 [s]
Min: 0.2 [g] at -0.010 [s]

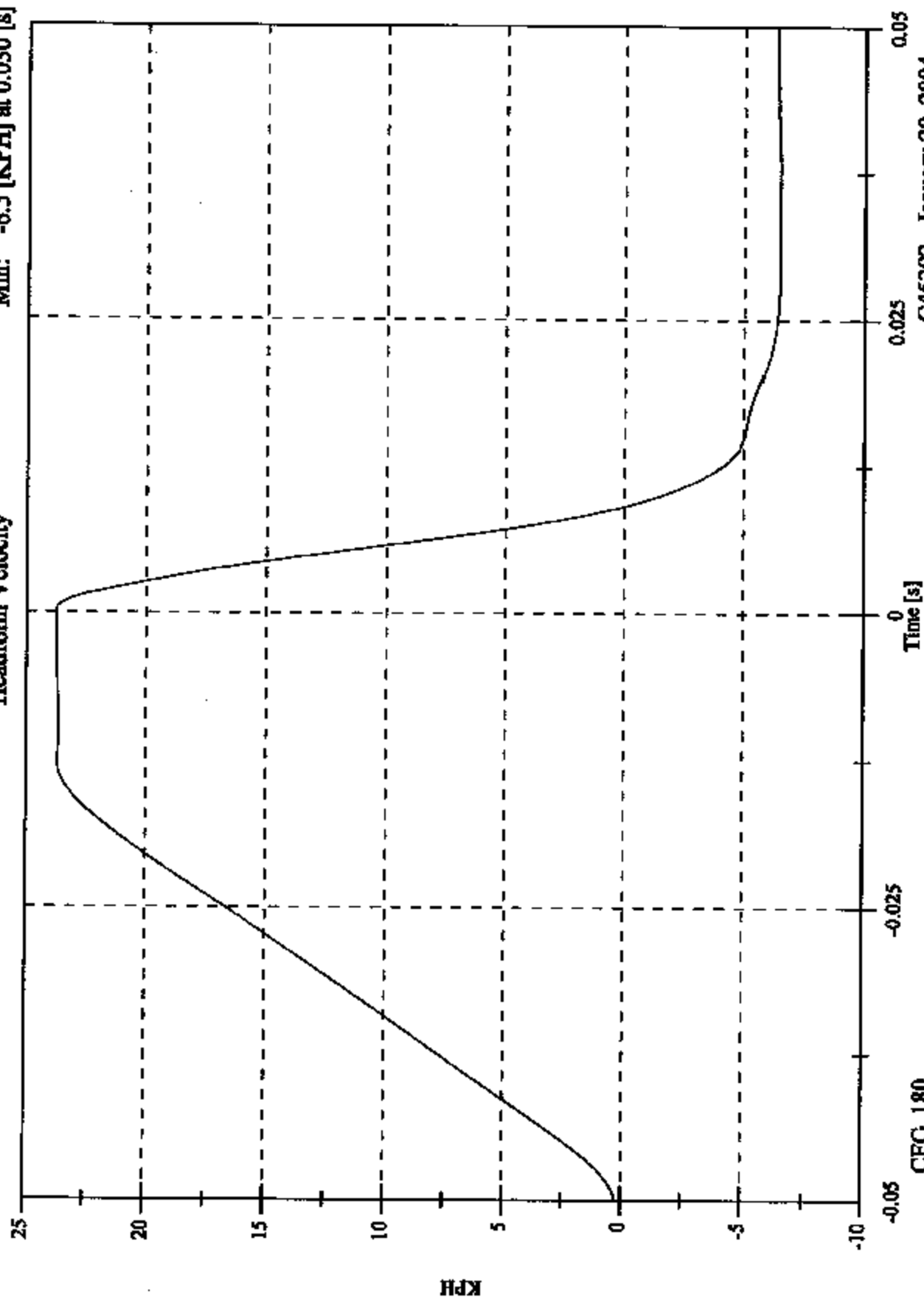
Headform Resultant



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 23.8 [KPH] at -0.000 [s]
 Min: -6.5 [KPH] at 0.030 [s]

Headform Velocity



CFC_180

-0.025

Time [s]

0.025

0.05

C45202 - January 20, 2004



FMK58 201U
04 NISSAN QUEST
PRE TEST
VER DO NON 32 JAN 04

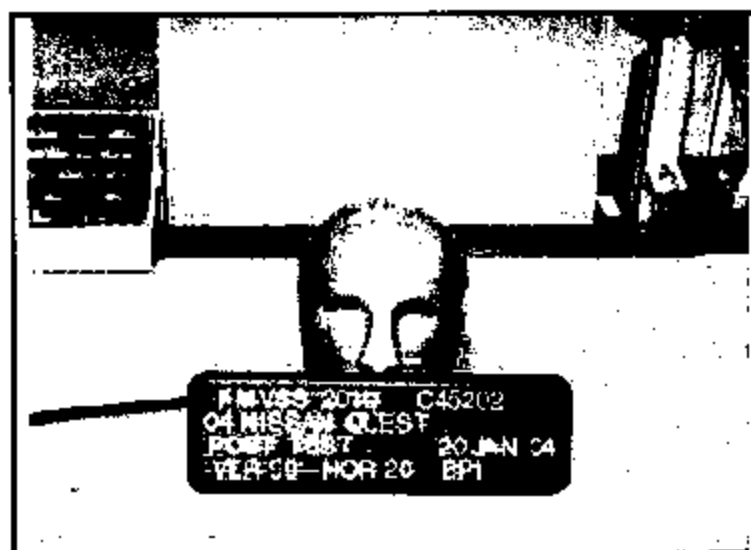
FMVSS 2010 C-45202
04 NISSAN QUEST
POST TEST 20 JAN 04
VER 90 HOR 5 OPT

POST-IMPACT OPT

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	03
Test Date:	January 20, 2004
Target Location:	B-Pillar
Target Code:	BP1
Horizontal Impact Angle:	90°
Vertical Impact Angle:	20°
Ambient Temperature:	24°C
Relative Humidity:	17%
Time of Impact:	11:20
Headform Number:	0355

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	5	☒ mm right	☐ mm left
On Centerline	68	mm up	



POST-IMPACT BP1 HEADFORM

Free Motion HIC	678.6
HIC(d)	678.3
Impact Velocity (kph)	18.75
HIC T1 (msec)	5.8
HIC T2 (msec)	11.8

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - BP1

FMH Headform 0355

Location: BP1

Test Date: January 20, 2004

Work File: BP1

TEST RESULTS

Lab Temperature: 24 C

HICd: 678.3

Lab Humidity: 17 %

HIC (36ms): 678.6

Velocity at Impact: 18.75 KPH

t1: 5.8 msec

t2: 11.8 msec

Free Flight Distance: 212.35 mm

Duration: 5.9 msec

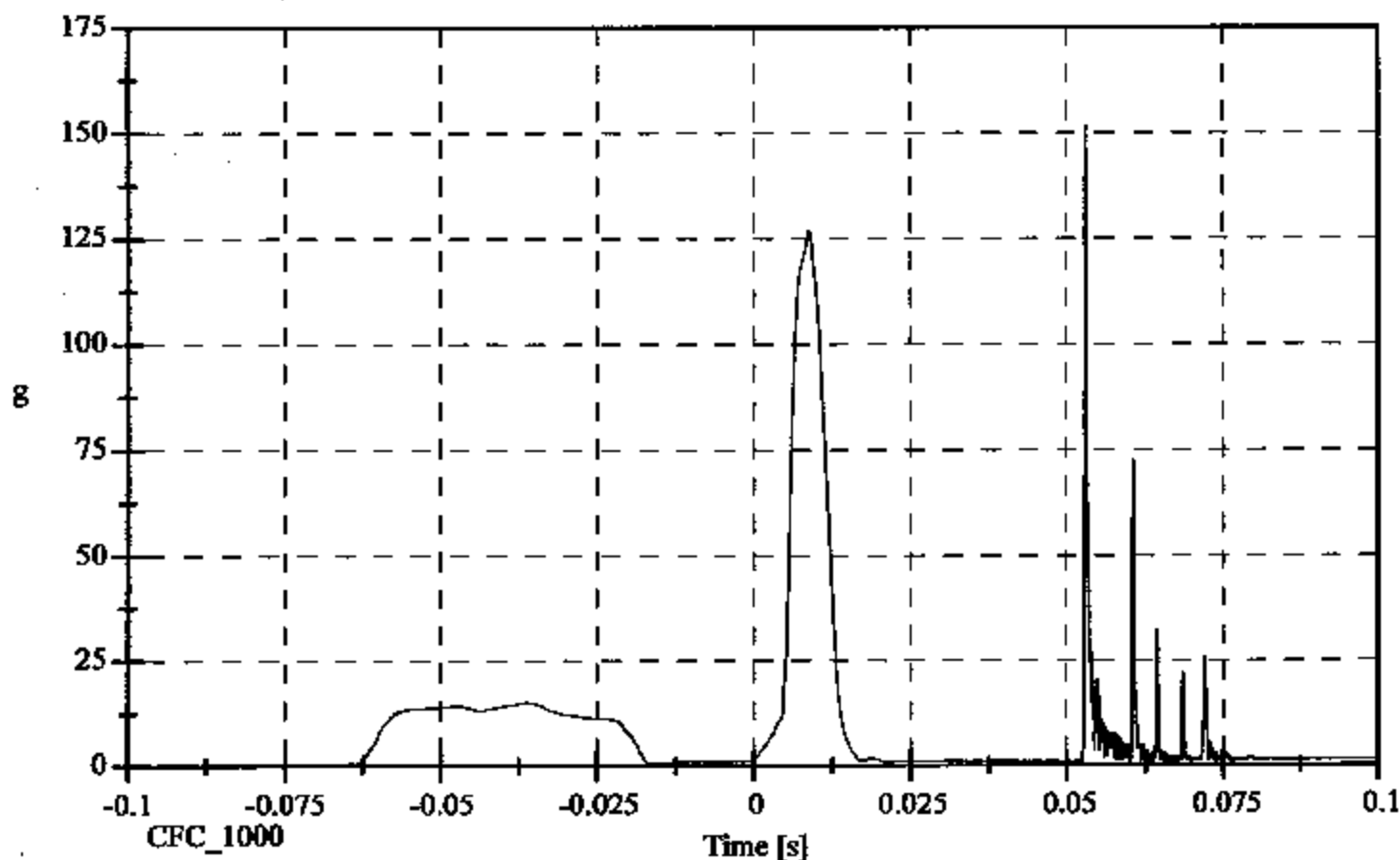
Average Acceleration: 8.1 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 151.6 [g] at 0.053 [s]

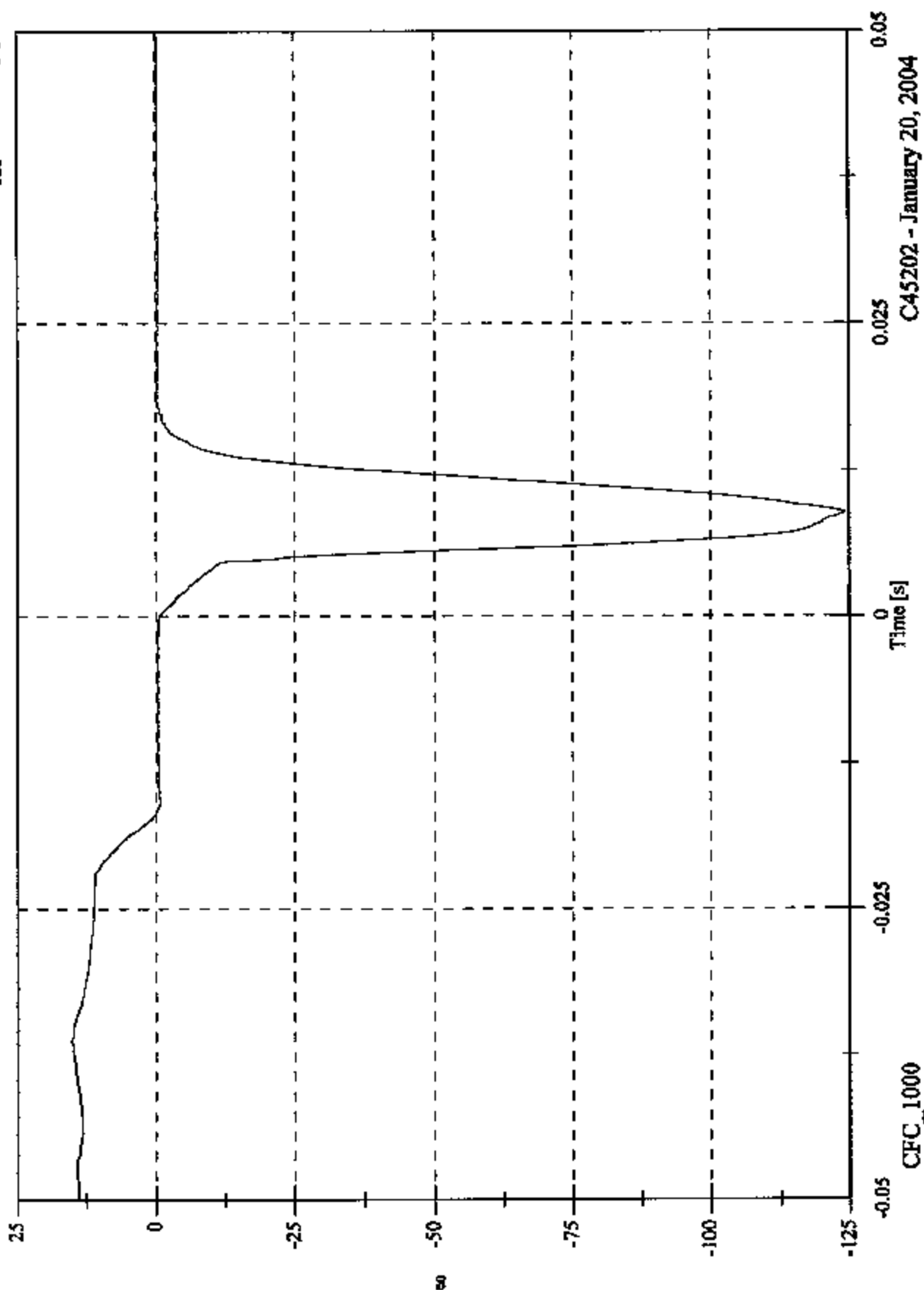
Min: 0.0 [g] at -0.089 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 15.2 [g] at -0.036 [s]
Min: -124.2 [g] at 0.009 [s]

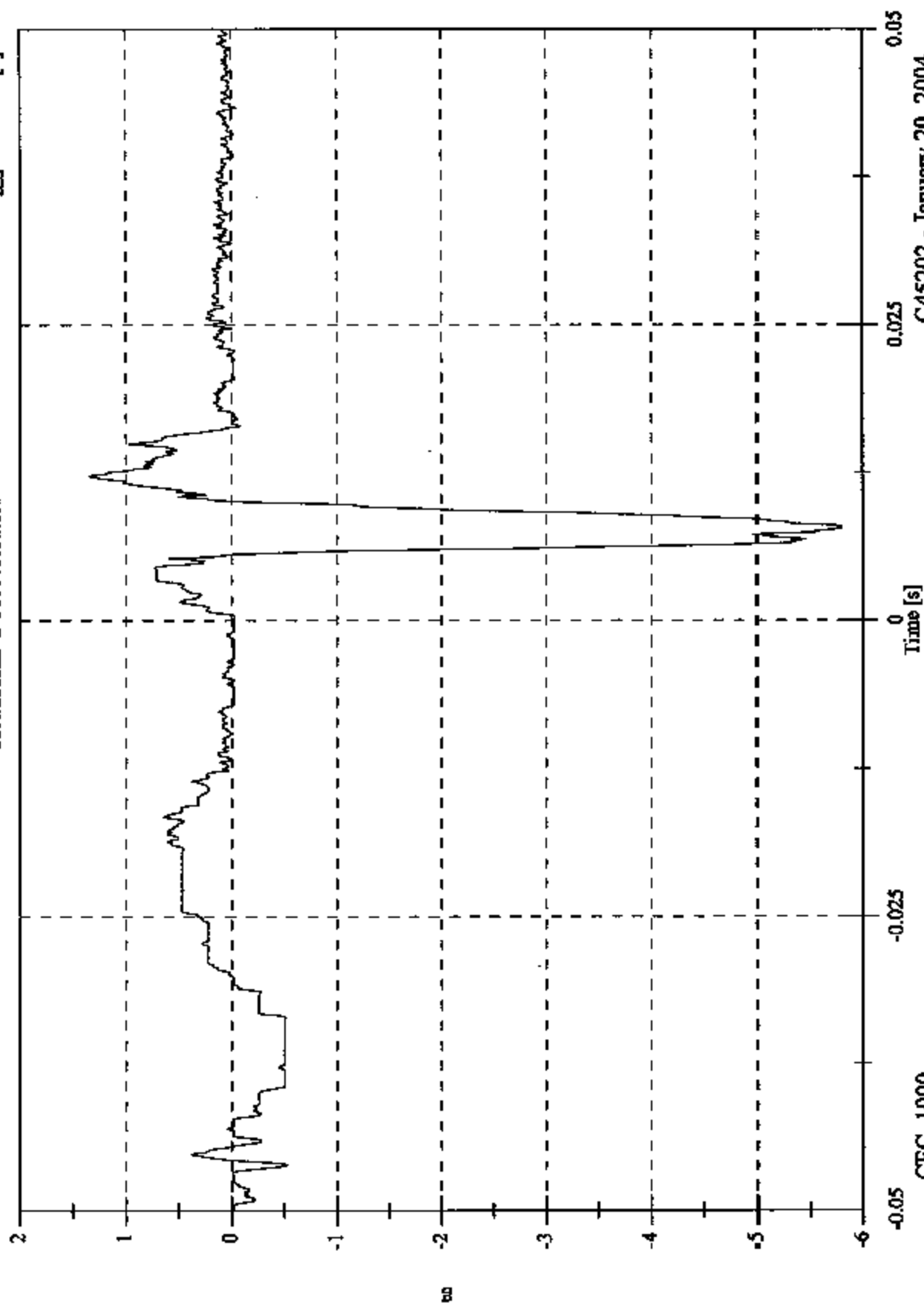


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 1.4 [g] at 0.012 [s]
Min: -5.8 [g] at 0.008 [s]



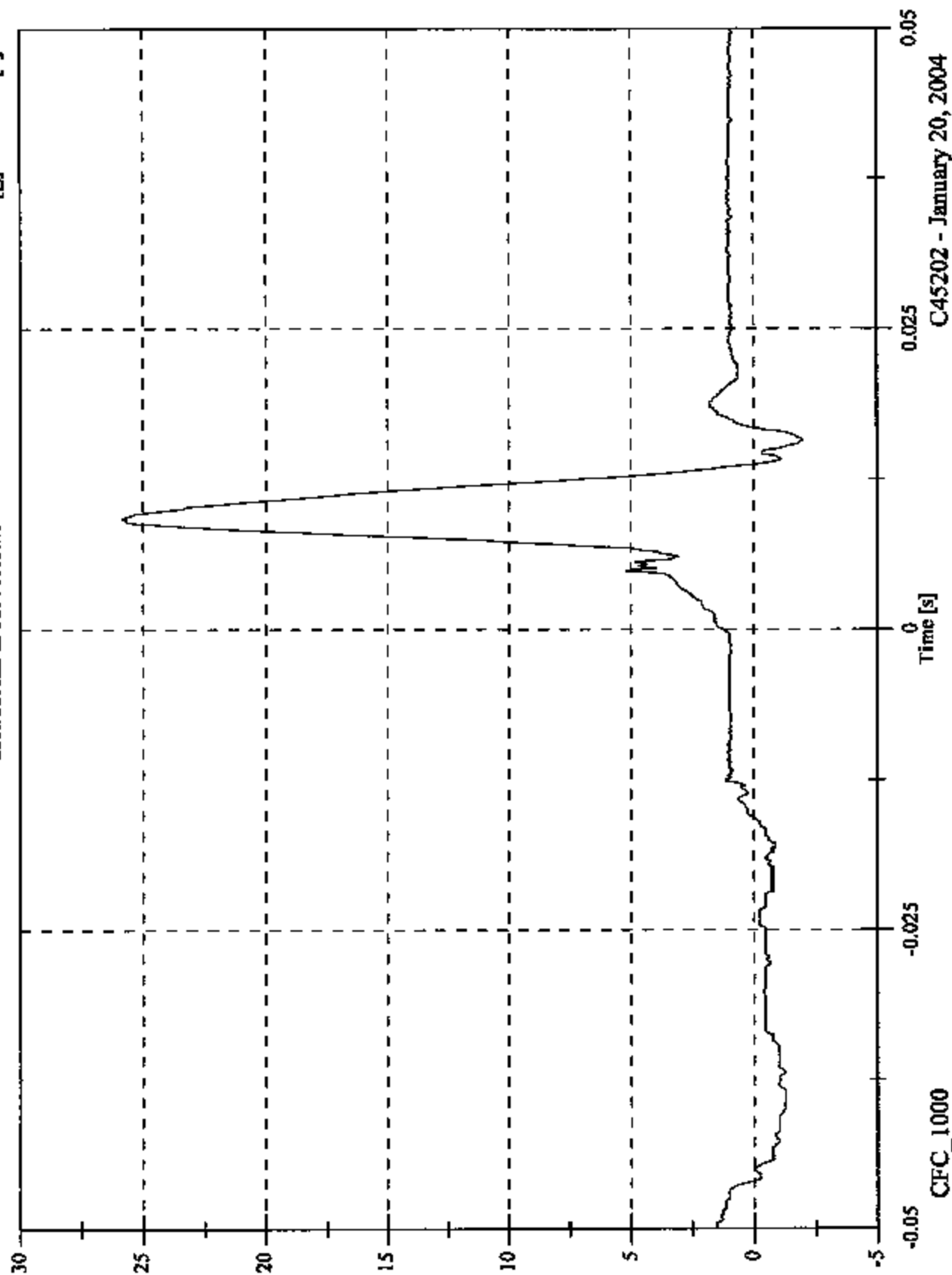
C45202 - January 20, 2004

C45202 Passenger Side BP1 Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 25.8 [g] at 0.009 [s]
Min: -2.0 [g] at 0.016 [s]

Headform Z Acceleration

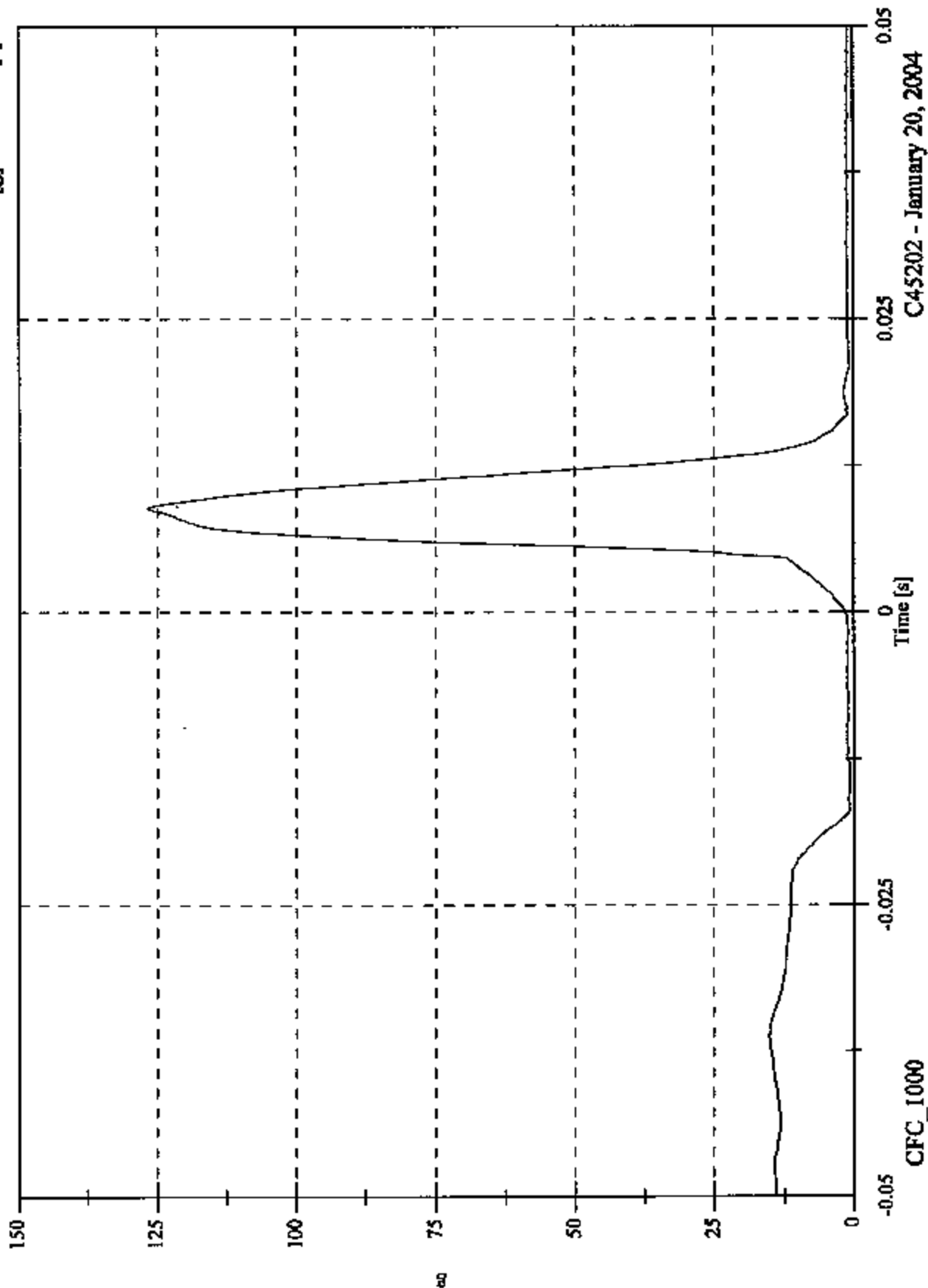


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 126.9 [g] at 0.009 [s]
Min: 0.6 [g] at -0.014 [s]



CFC_1000

-0.025

Time [s]

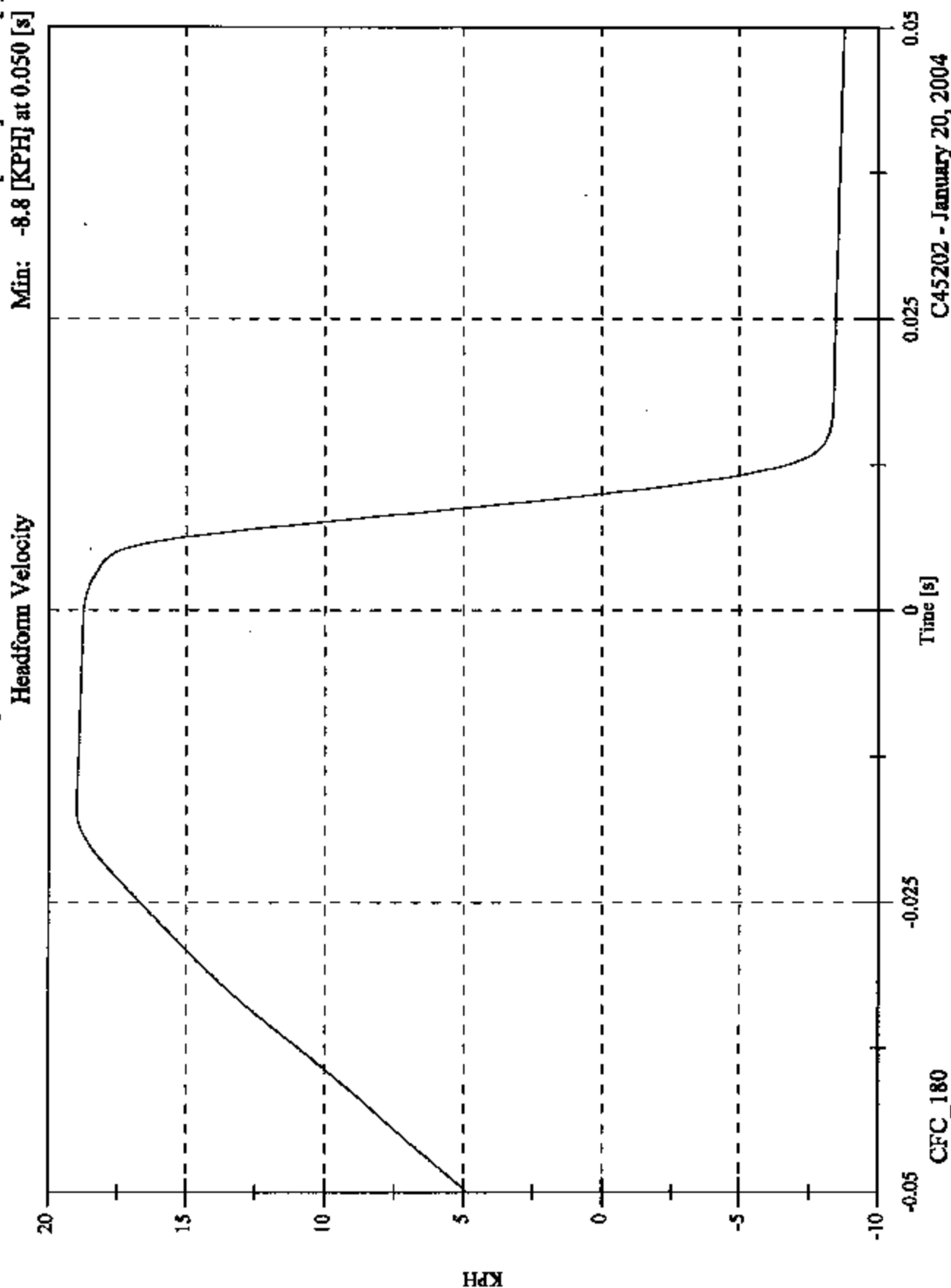
0.025

0.05

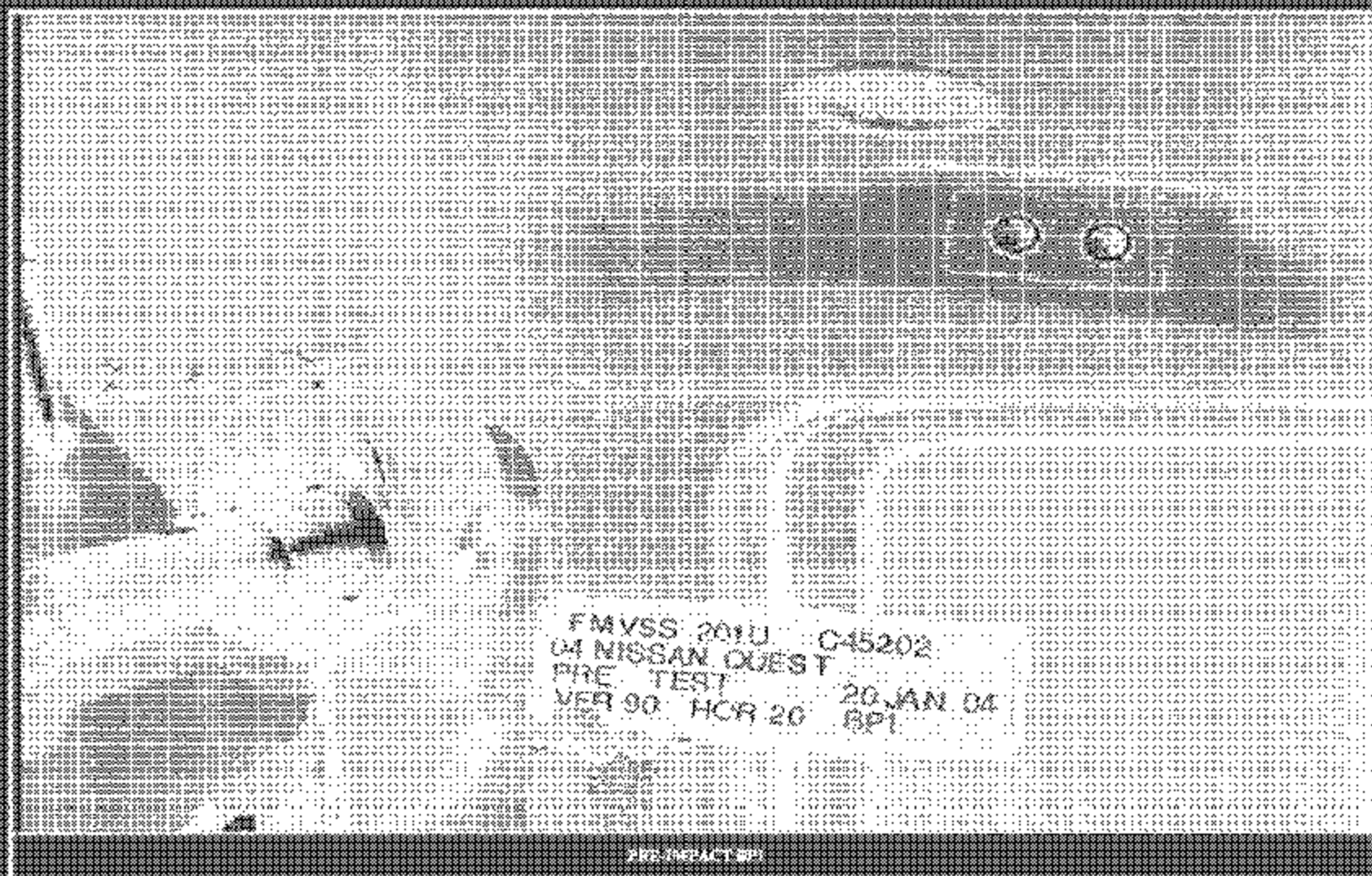
C45202 - January 20, 2004

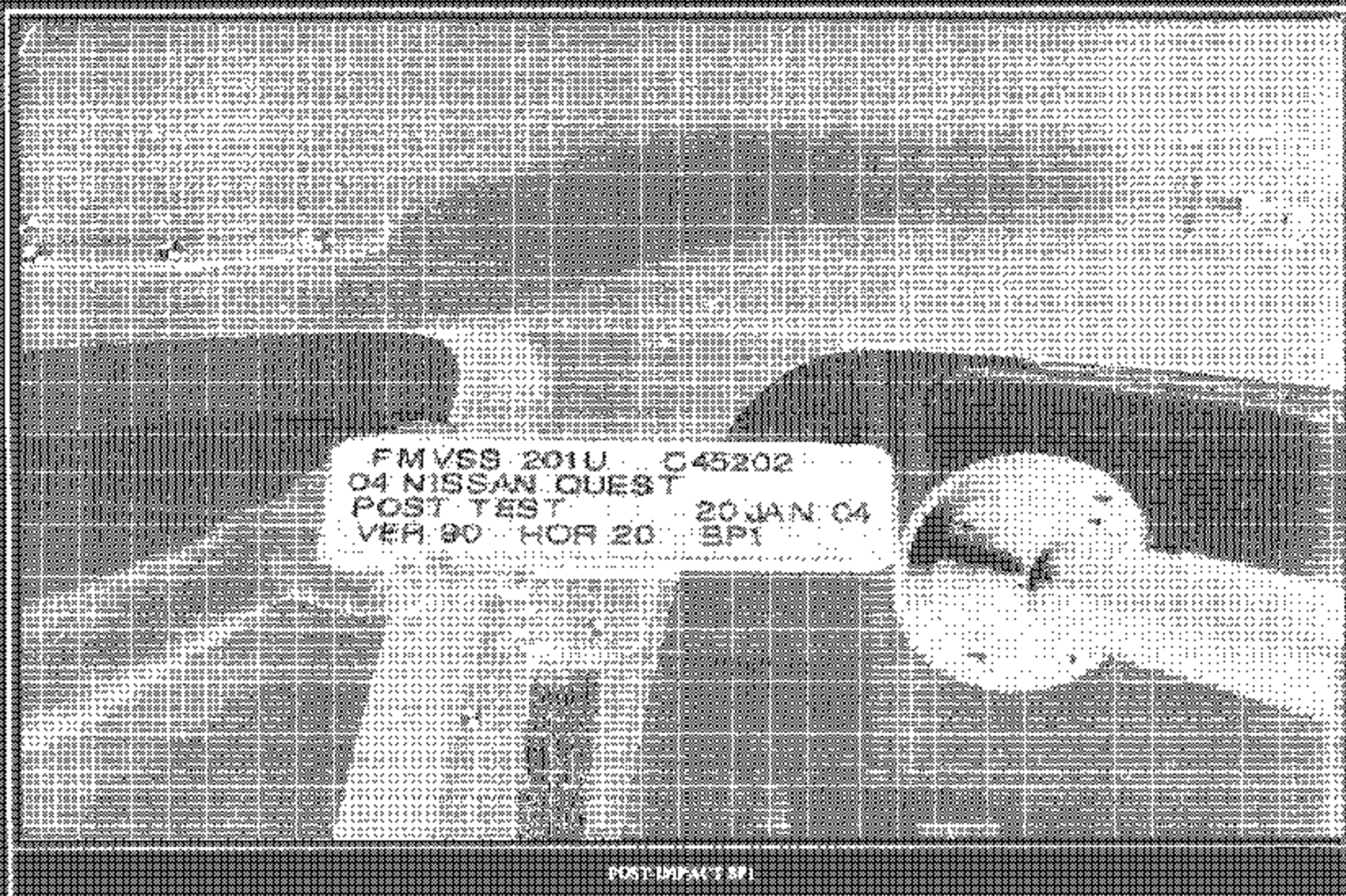
FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 19.0 [KPH] at -0.017 [s]
Min: -8.8 [KPH] at 0.050 [s]



C45202 Passenger Side BP1 Impact Plot #5





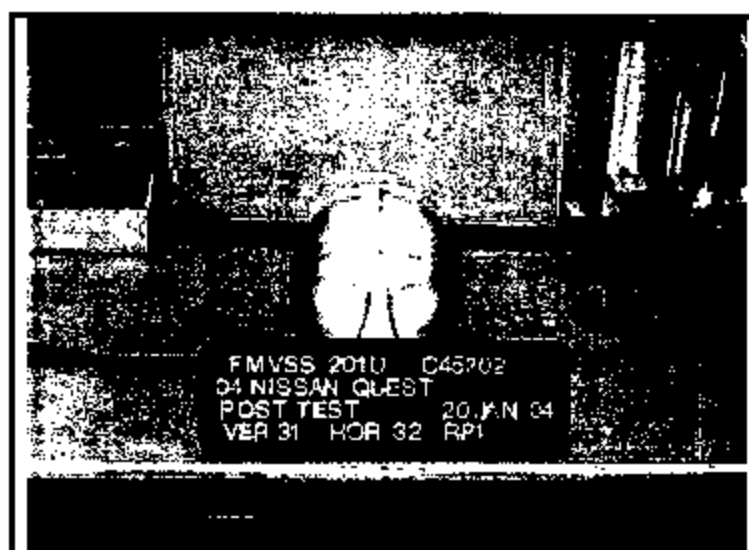
POST IMPACT #1

K20-04

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	04
Test Date:	January 20, 2004
Target Location:	Rear Pillar
Target Code:	RP1
Horizontal Impact Angle:	31°
Vertical Impact Angle:	32°
Ambient Temperature:	24°C
Relative Humidity:	17%
Time of Impact:	12:05
Headform Number:	805

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	7	☒ mm right	☐ mm left
On Centerline	40	mm up	



POST-IMPACT RP1 HEADFORM

Free Motion HIC	237.8
HIC(d)	345.8
Impact Velocity (kph)	18.48
HIC T1 (msec)	5.9
HIC T2 (msec)	18.4

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - RP1

FMH Headform 805

Location: RP1

Test Date: January 20, 2004

Work File: RP1

TEST RESULTS

Lab Temperature: 24 C

HICd: 345.8

Lab Humidity: 17 %

HIC (36ms): 237.8

Velocity at Impact: 18.48 KPH

t1: 5.9 msec

t2: 18.4 msec

Free Flight Distance: 209.96 mm

Duration: 12.5 msec

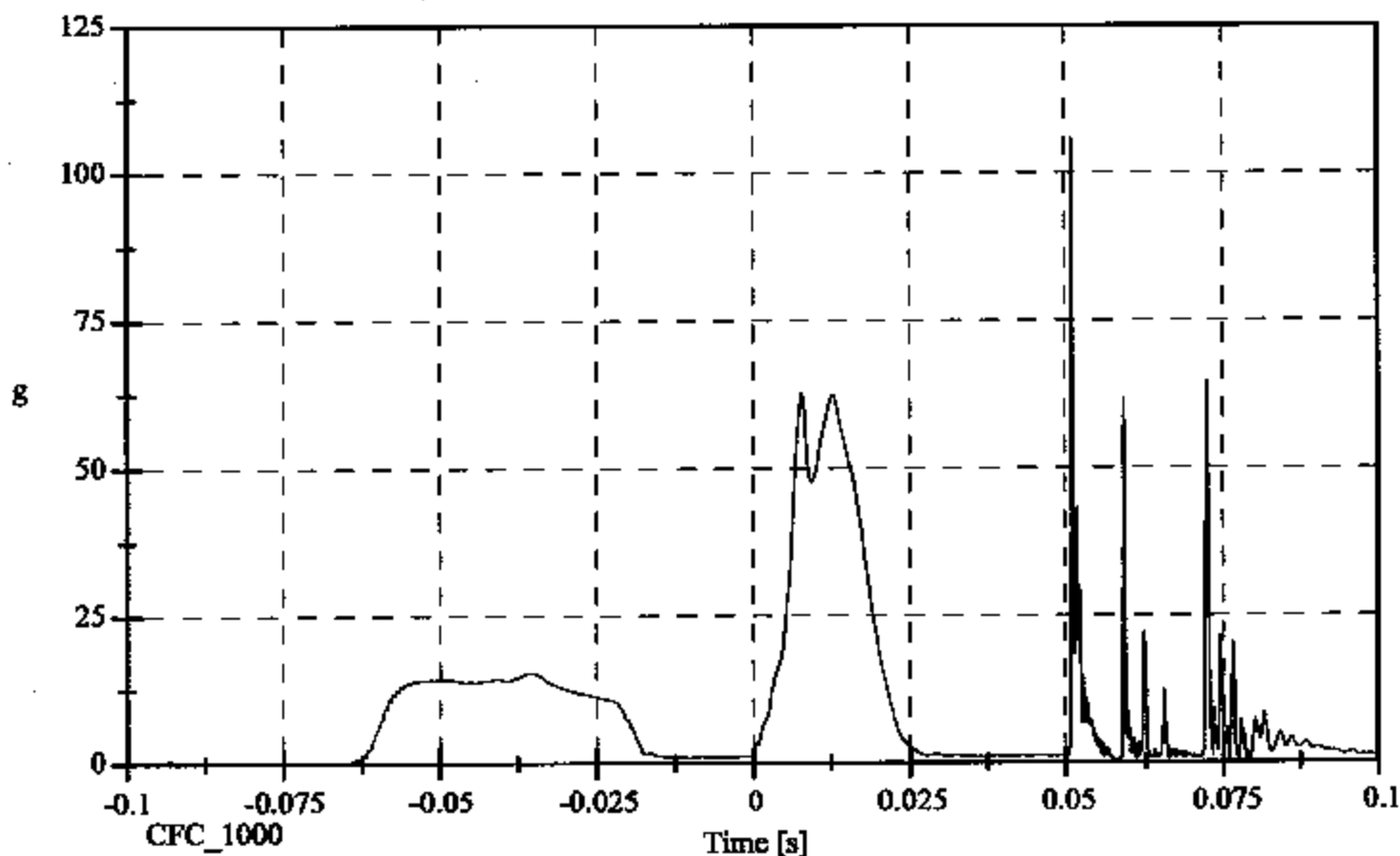
Average Acceleration: 8.5 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 105.8 [g] at 0.051 [s]

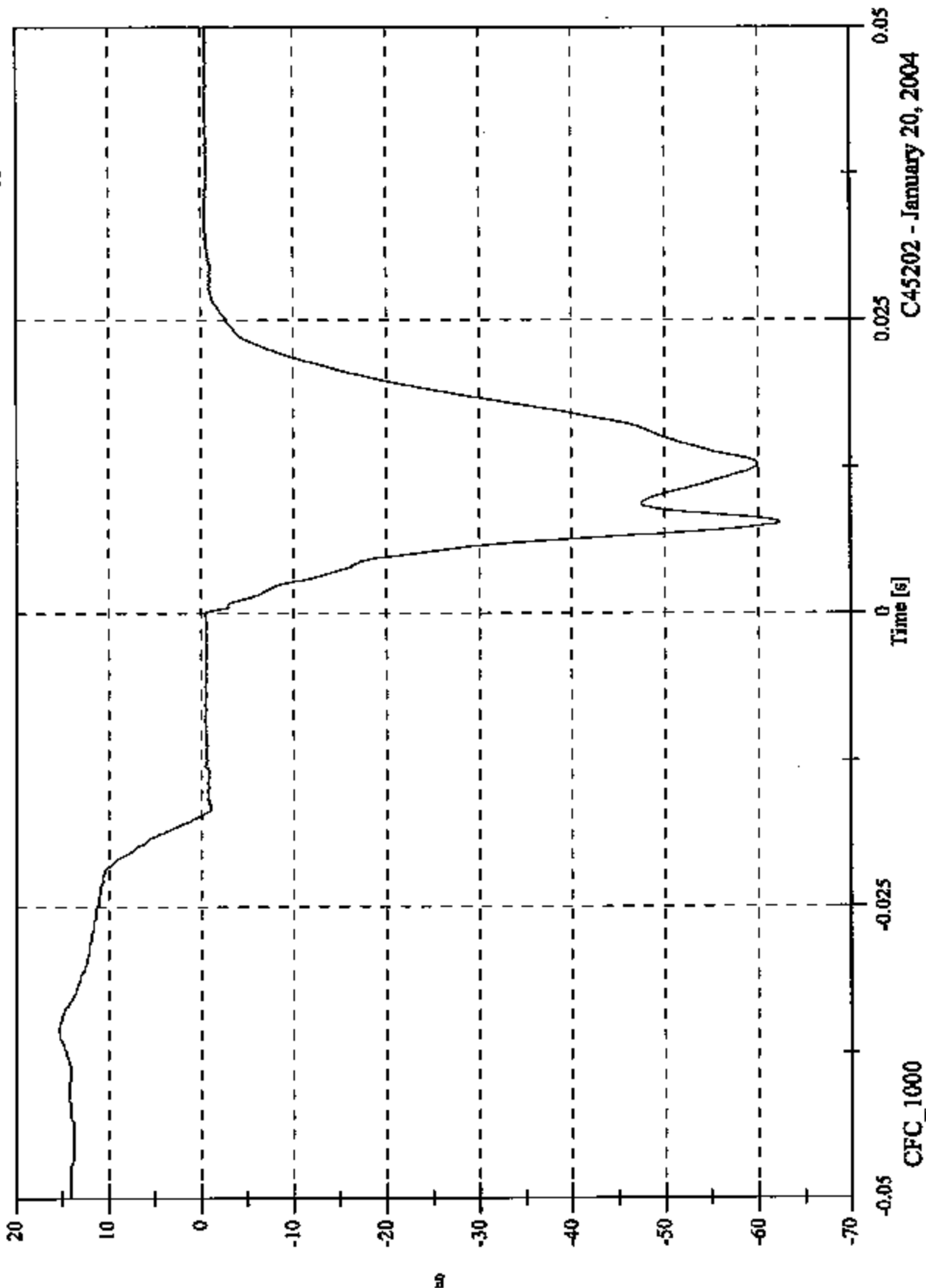
Min: 0.0 [g] at -0.087 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 15.4 [g] at -0.035 [s]
Min: -62.3 [g] at 0.008 [s]

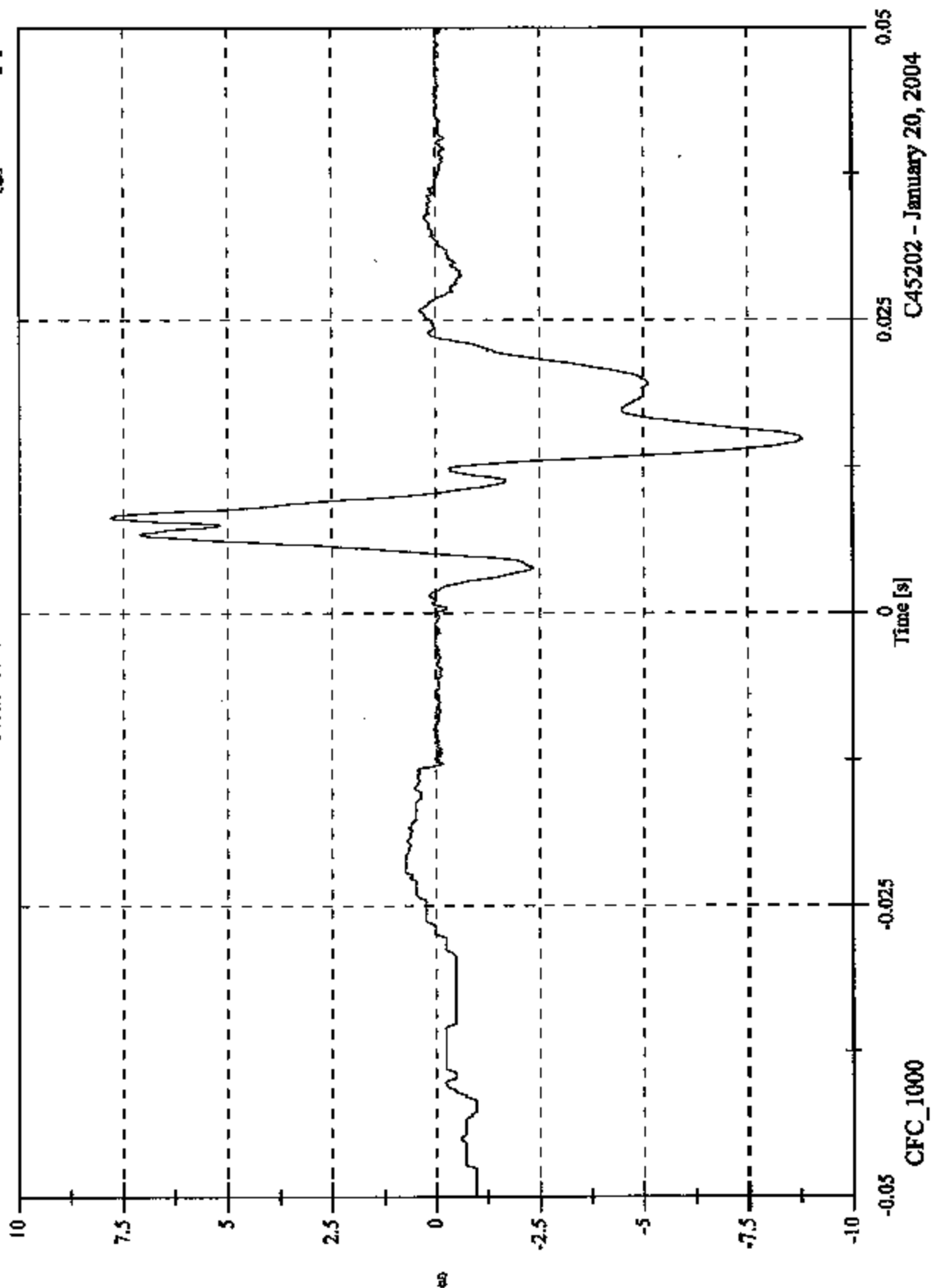


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 7.8 [g] at 0.008 [s]
Min: -8.8 [g] at 0.015 [s]



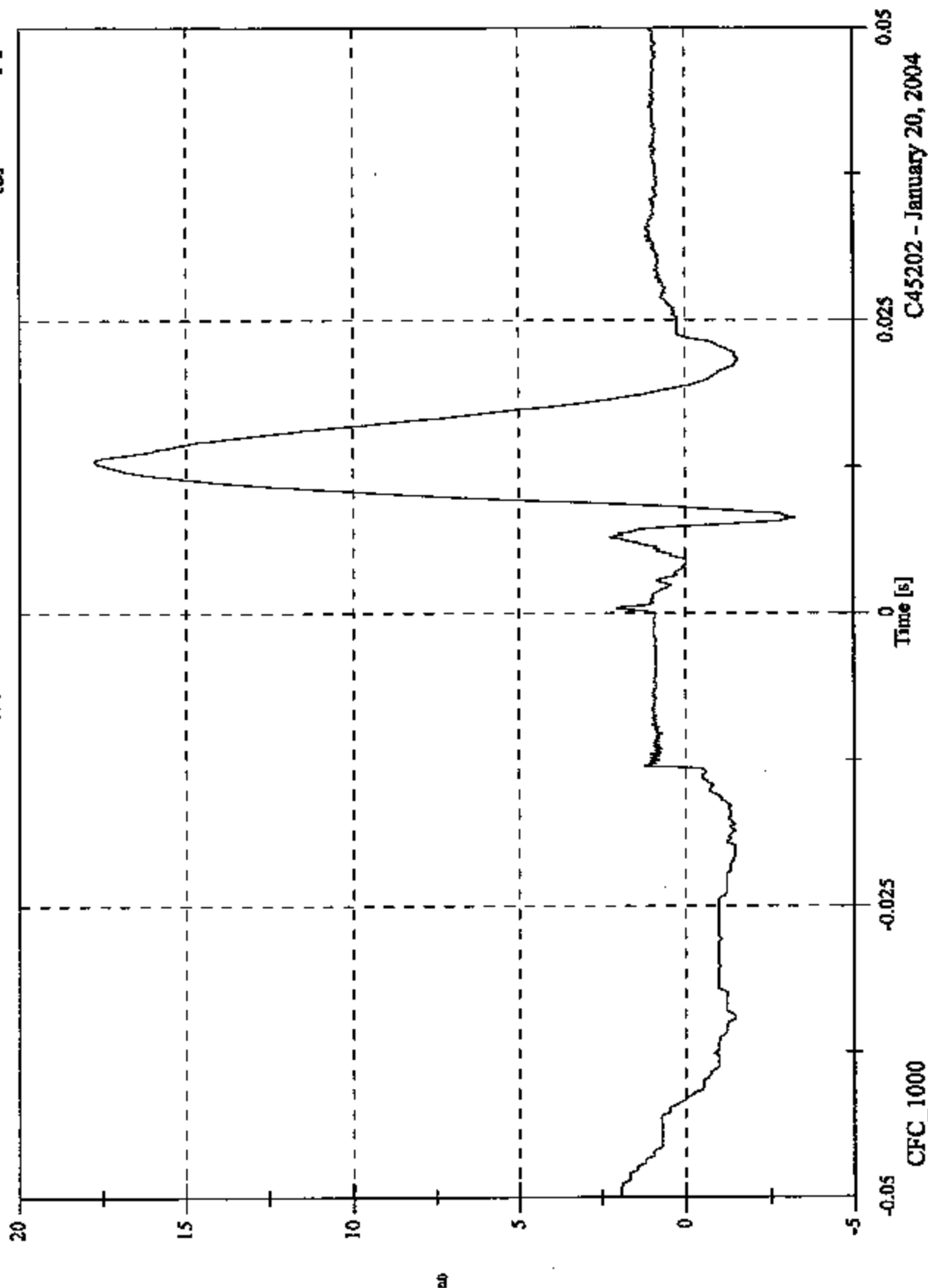
C45202 - January 20, 2004

C45202 Passenger Side RP1 Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Z Acceleration

Max: 17.7 [g] at 0.013 [s]
Min: -3.3 [g] at 0.008 [s]

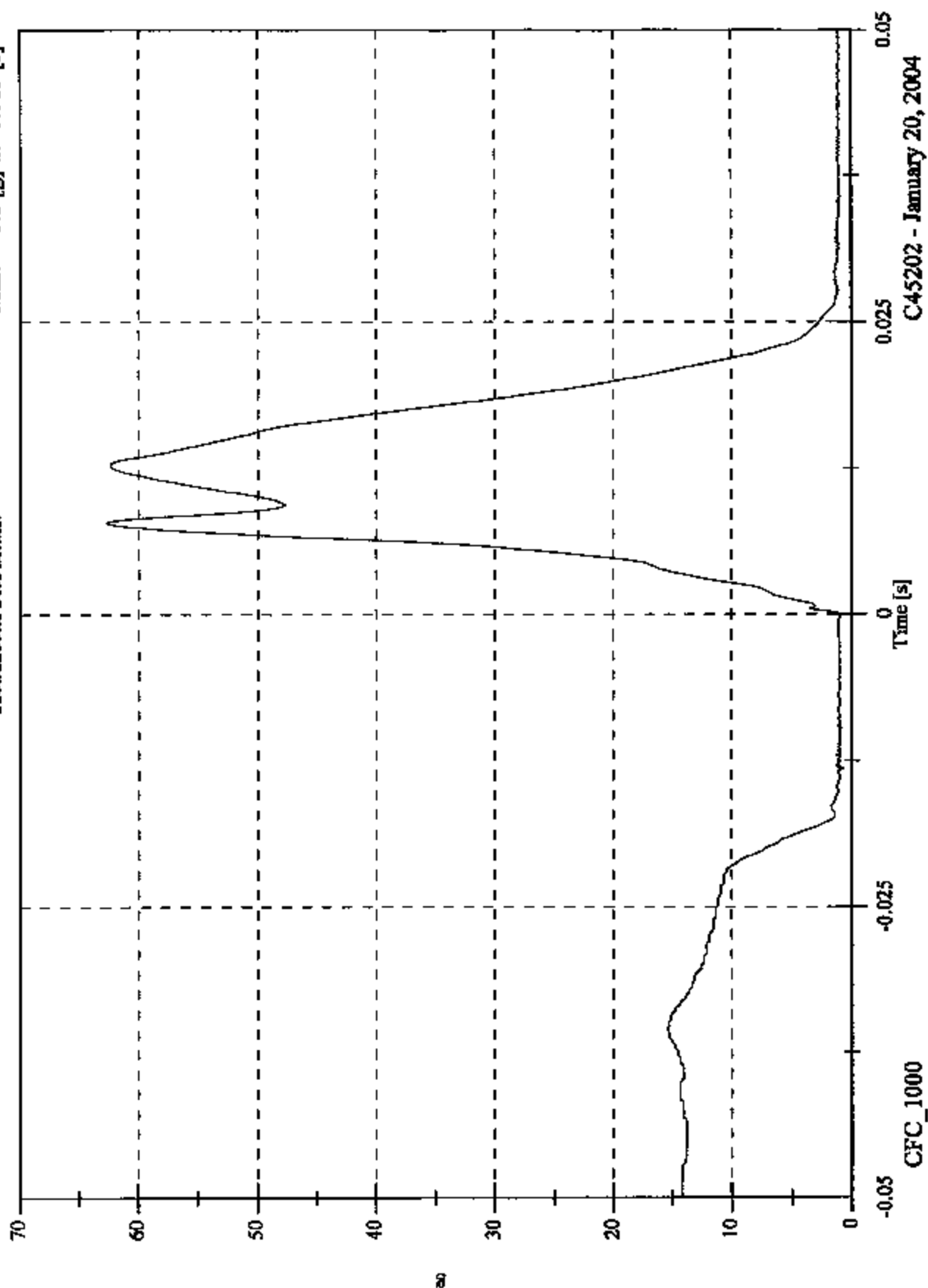


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

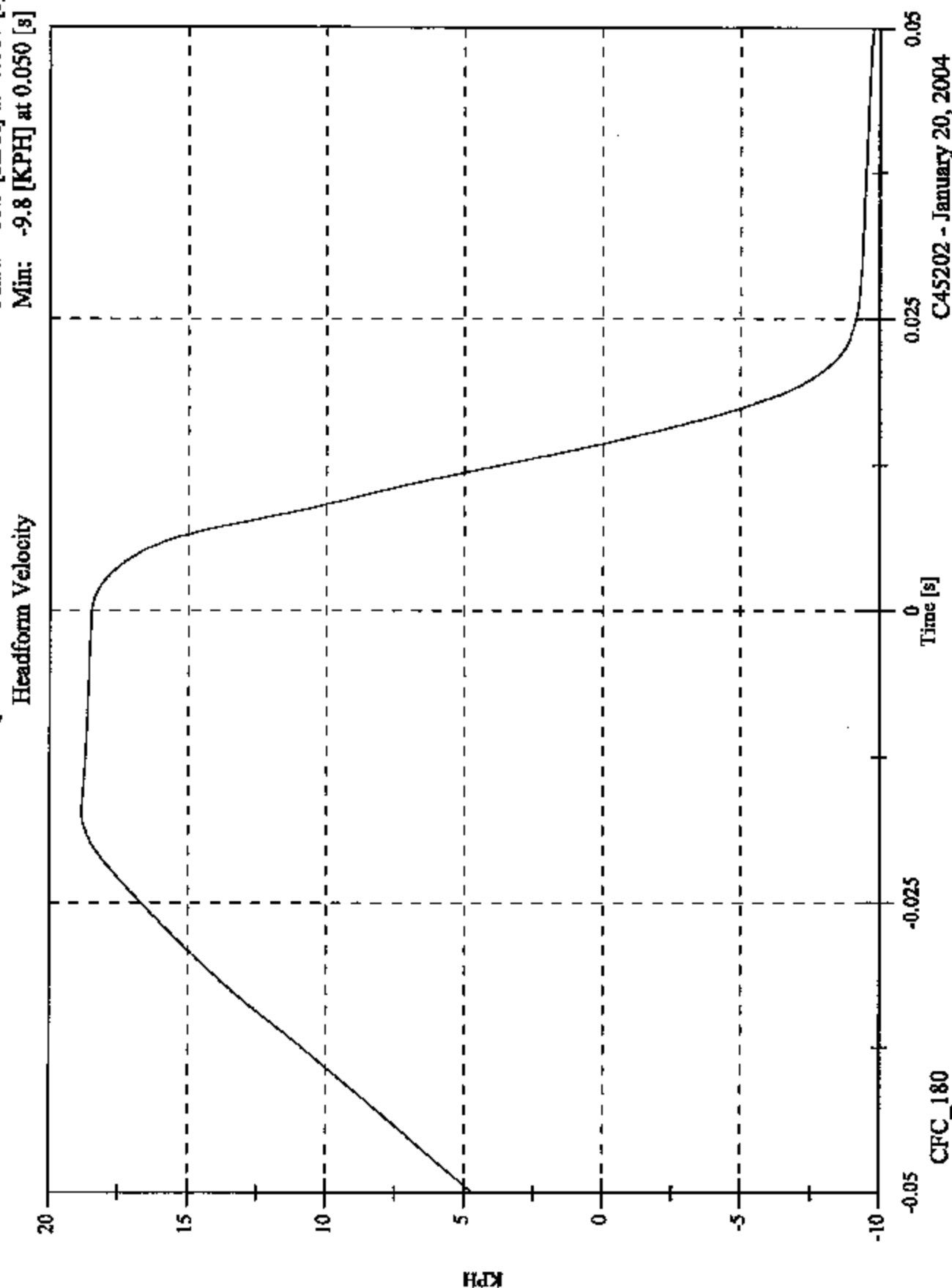
Max: 62.7 [g] at 0.008 [s]
Min: 0.8 [g] at -0.013 [s]

Headform Resultant

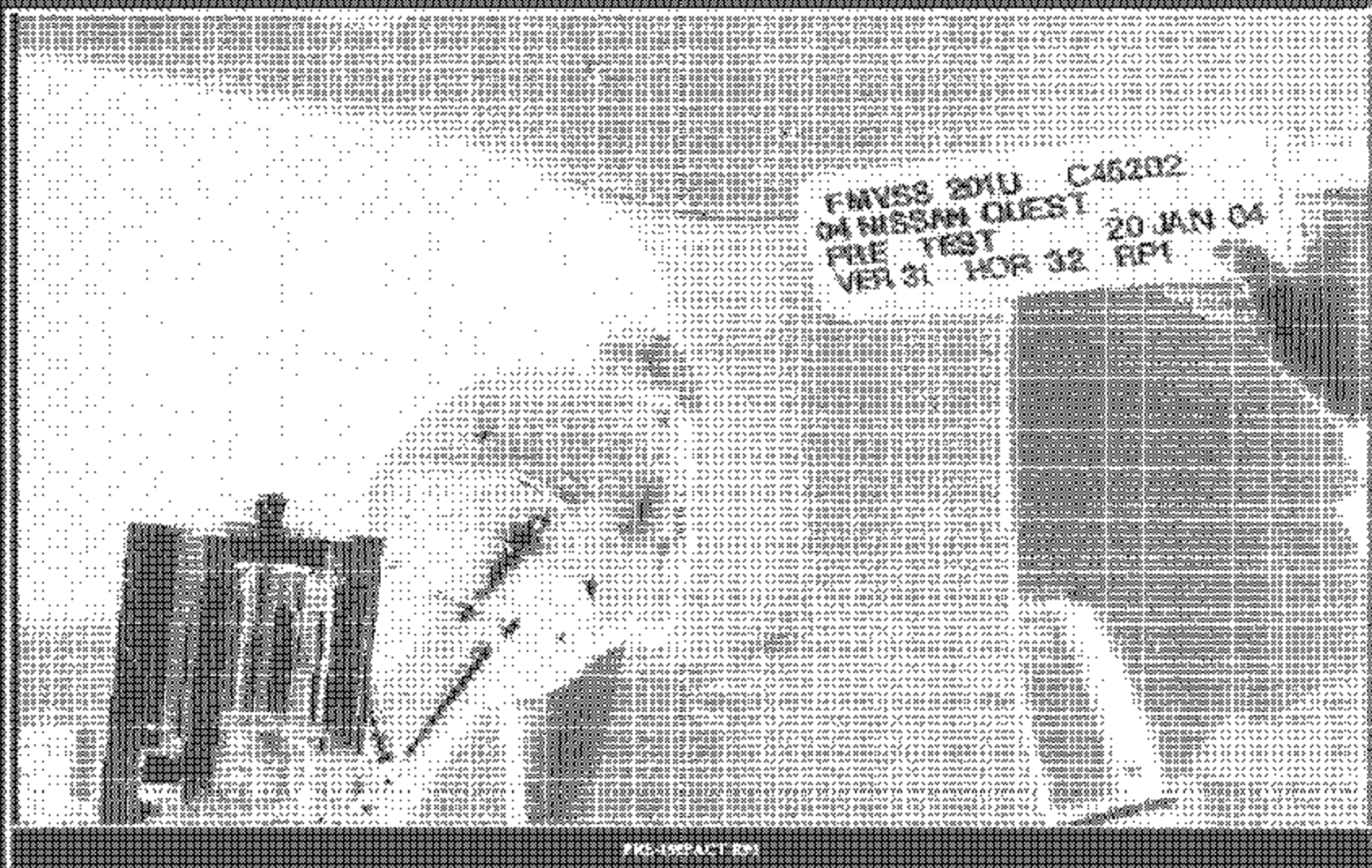


FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 18.9 [KPH] at -0.017 [s]
 Min: -9.8 [KPH] at 0.050 [s]



C45202 Passenger Side RP1 Impact Plot #5



FMVSS 201U C45202
04 HISSAM QUEST
PRE TEST 20 JAN 04
VER 31 HOR 32 RPI

FIG-IMPACT 201



VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SBE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	05
Test Date:	January 20, 2004
Target Location:	A-Pillar
Target Code:	AP1
Horizontal Impact Angle:	117°
Vertical Impact Angle:	23°
Ambiant Temperature:	24°C
Relative Humidity:	17%
Time of Impact:	13:40
Headform Number:	0642

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	22	☒	mm right	☐ mm left
On Centerline	12		mm up	



POST-IMPACT AP1 HEADFORM

Free Motion HIC	535.4
HIC(d)	570.4
Impact Velocity (kph)	18.75
HIC T1 (msec)	4.8
HIC T2 (msec)	9.8

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - AP1

FMH Headform 0642

Location: AP1

Test Date: January 20, 2004

Work File: AP1

TEST RESULTS

Lab Temperature: 24 C

HICd: 570.4

Lab Humidity: 17 %

HIC (36ms): 535.4

Velocity at Impact: 18.75 KPH

t1: 4.8 msec

t2: 9.8 msec

Free Flight Distance: 212.25 mm

Duration: 5.1 msec

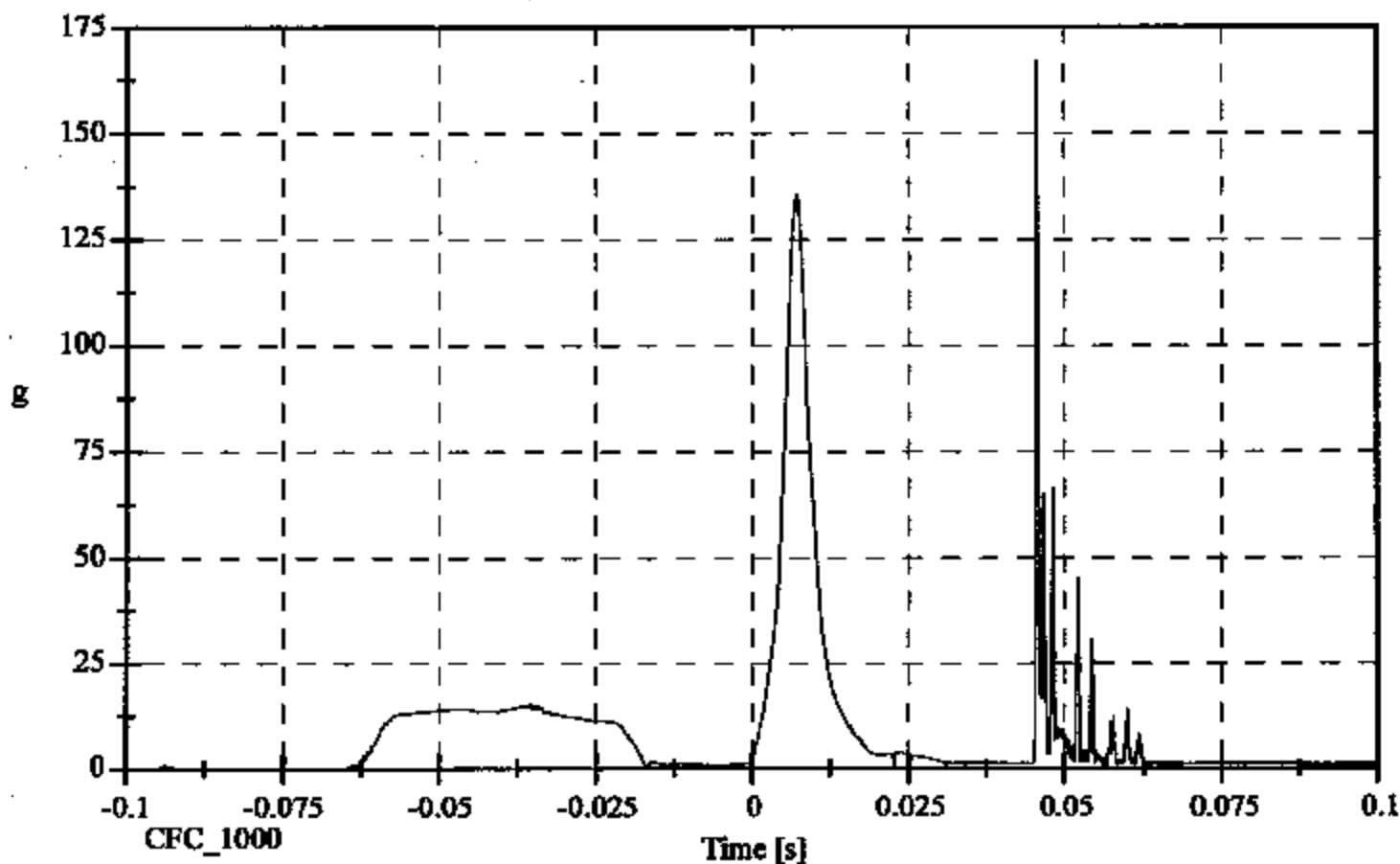
Average Acceleration: 8.4 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 167.0 [g] at 0.046 [s]

Min: 0.0 [g] at -0.088 [s]

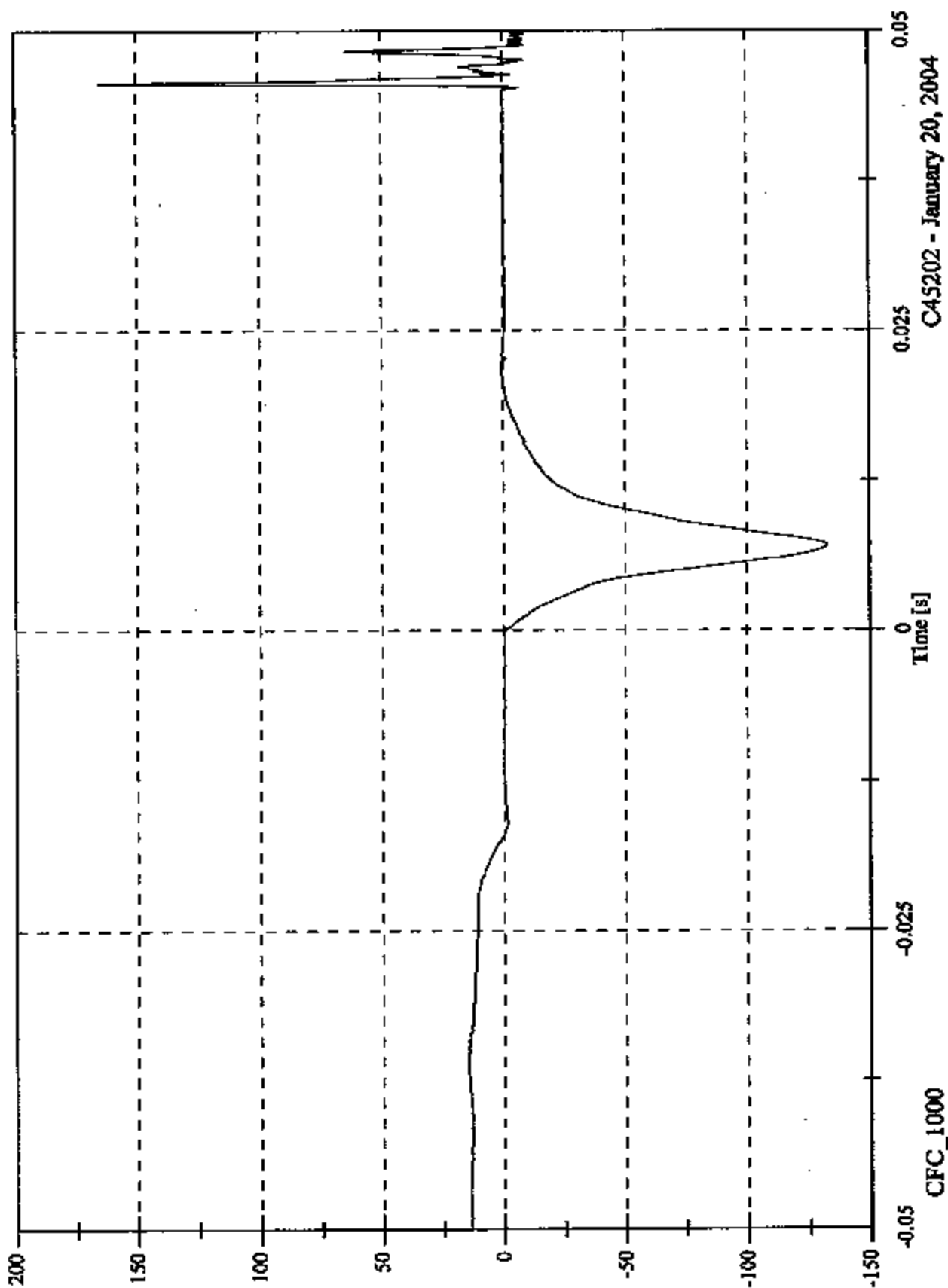


FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 165.1 [g] at 0.046 [s]

Min: -132.5 [g] at 0.007 [s]

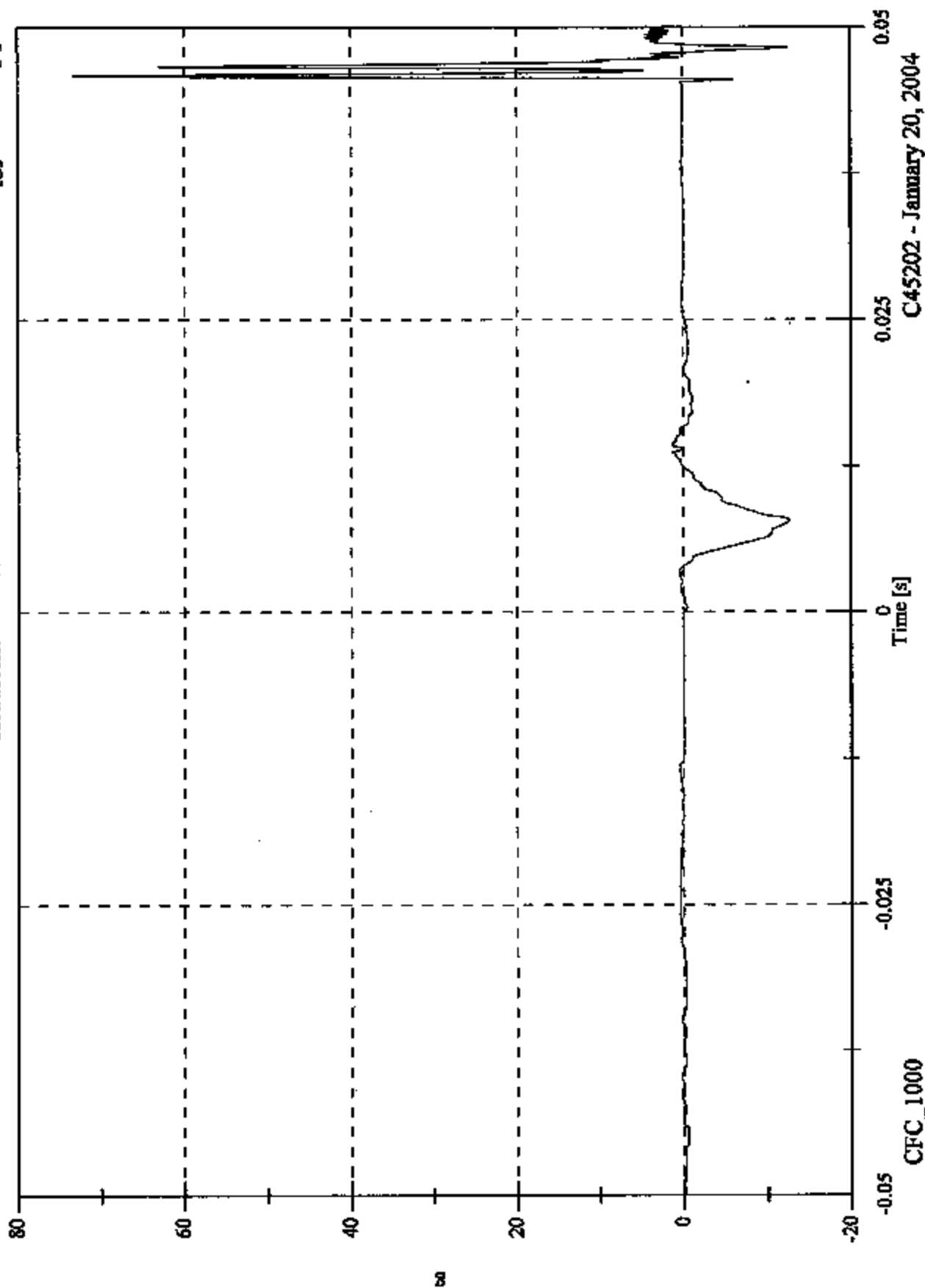


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 73.3 [g] at 0.046 [s]
Min: -12.6 [g] at 0.008 [s]

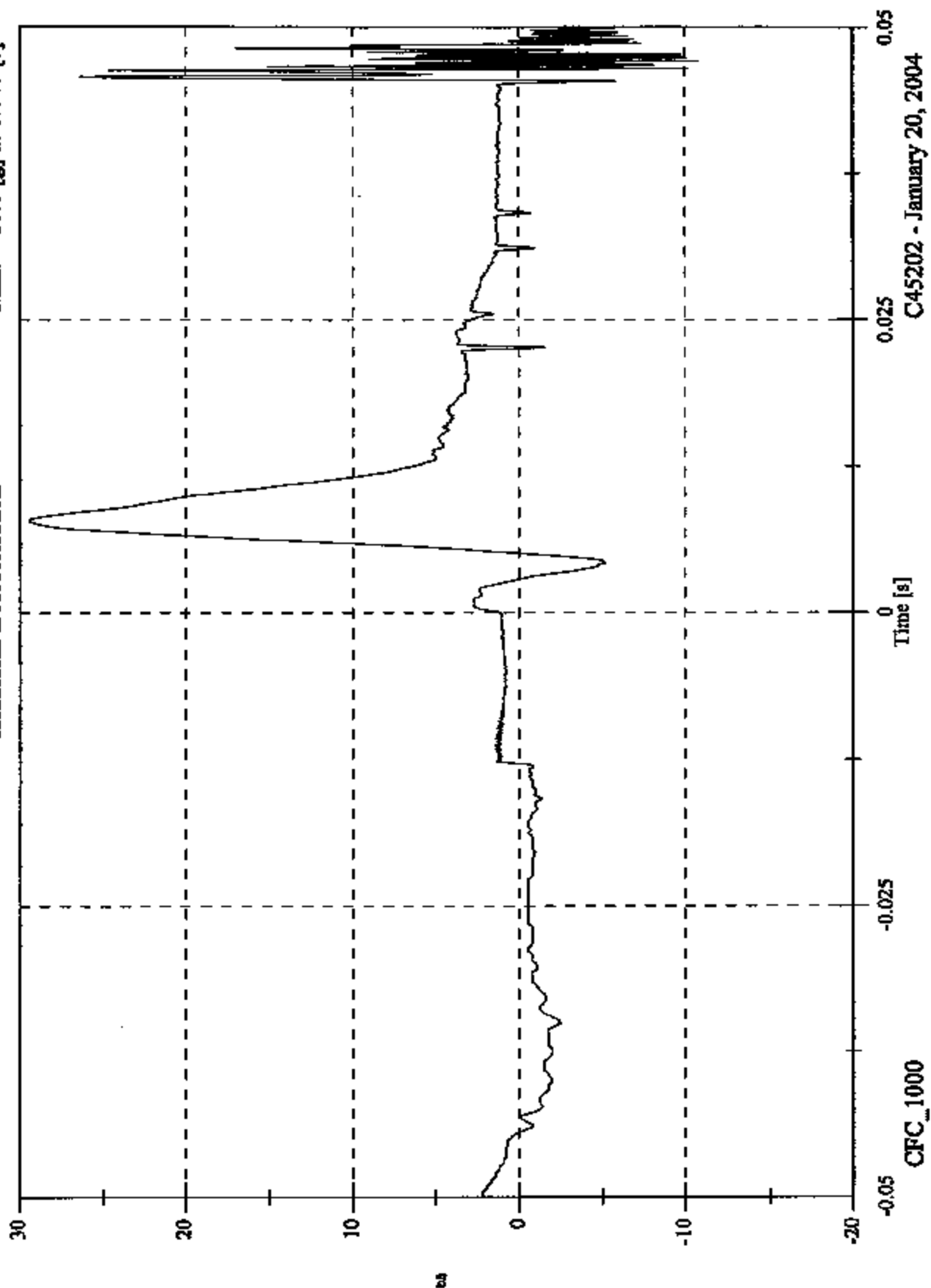


C45202 Passenger Side AP1 Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Z Acceleration

Max: 29.4 [g] at 0.008 [s]
Min: -10.8 [g] at 0.047 [s]

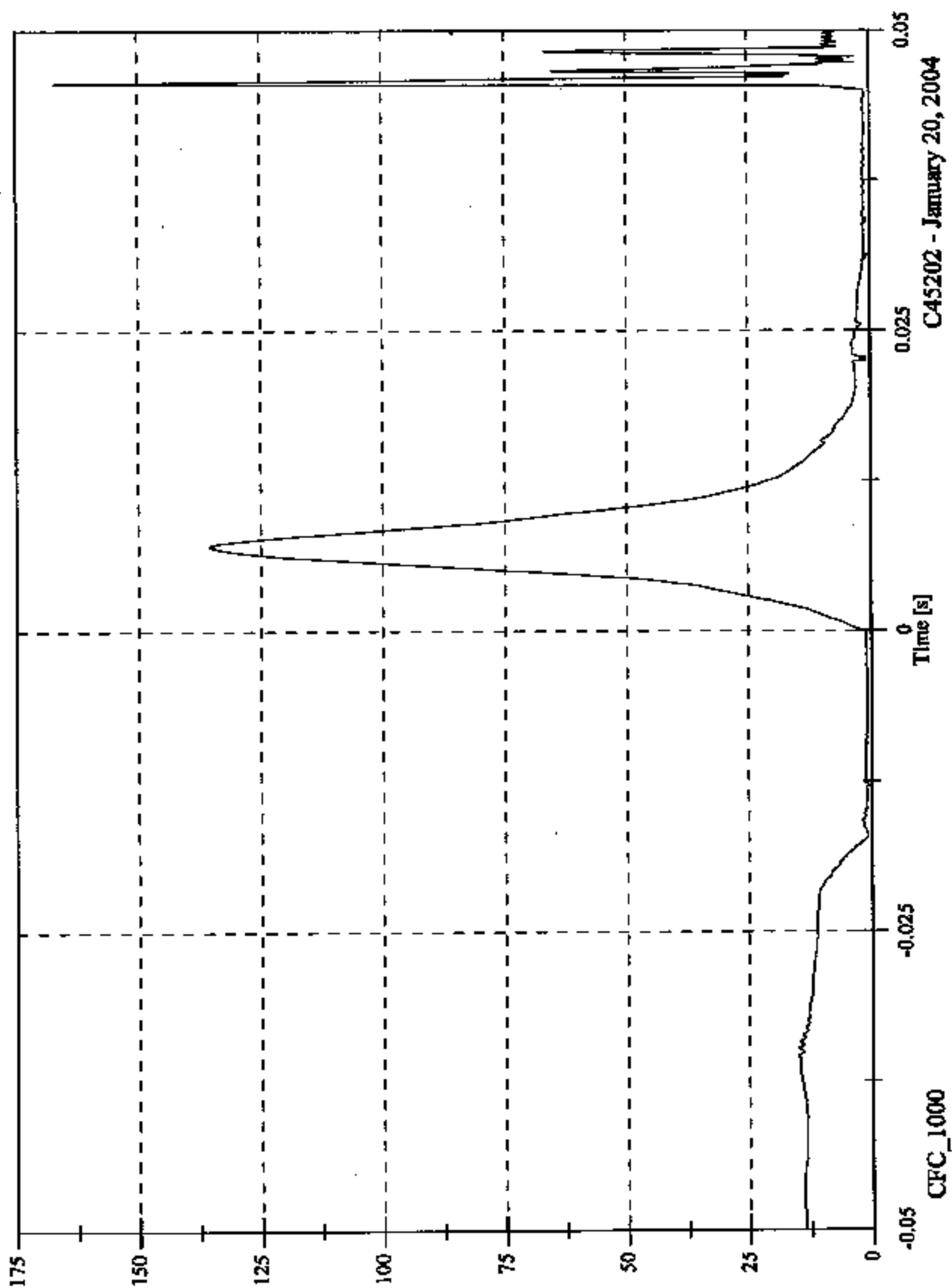


C45202 Passenger Side API Impact Plot #3

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

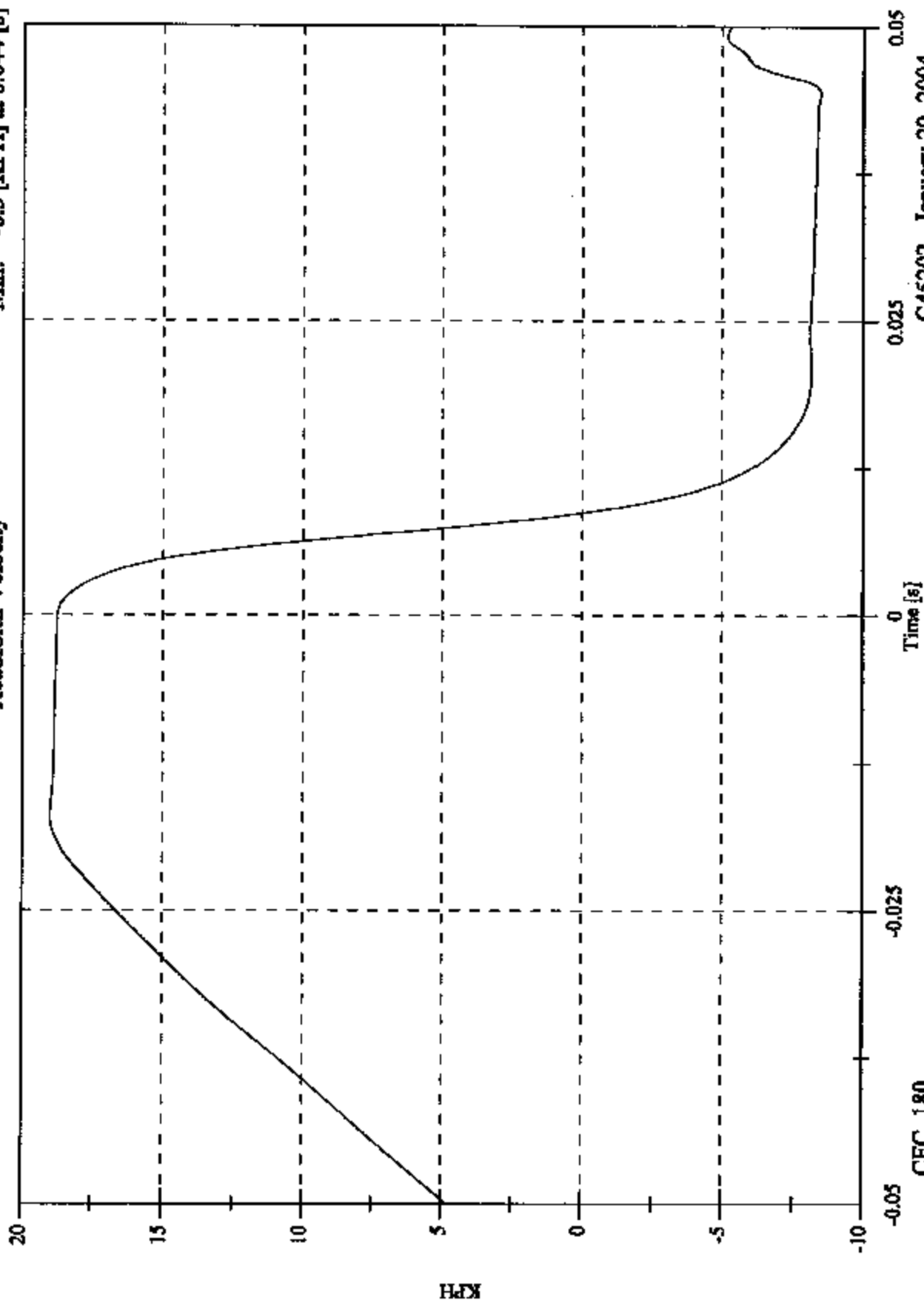
Max: 167.0 [g] at 0.046 [s]
Min: 0.5 [g] at -0.013 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 19.0 [KPH] at -0.017 [s]
 Min: -8.5 [KPH] at 0.044 [s]

Headform Velocity



CFC_180

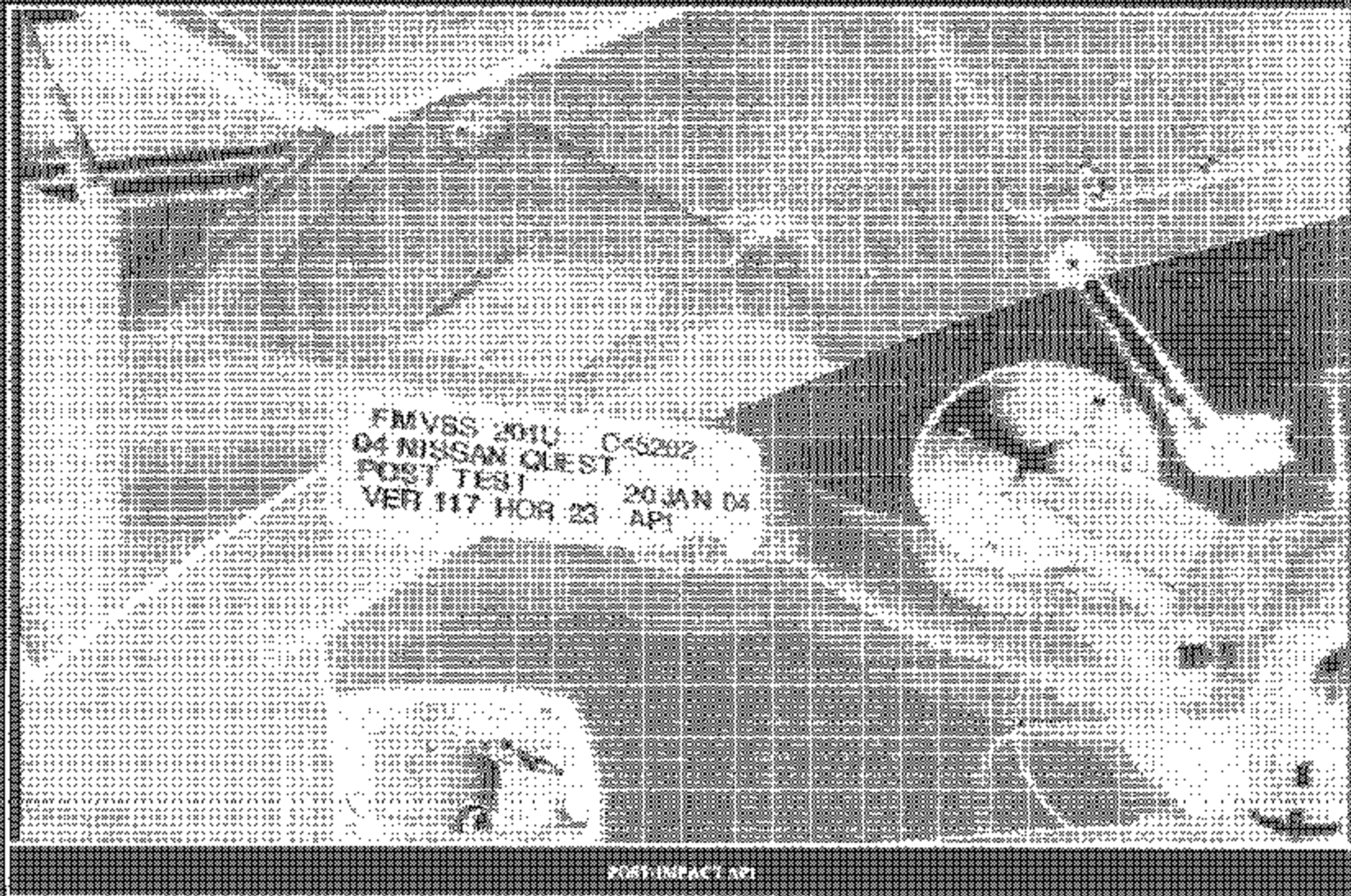
Time [s]

C45202 - January 20, 2004

FMYSS 201U C45202
04 NISSAN QUEST
PRE TEST
VER 117 HOR 23 20 JAN 04
API

PRO-IMPACT API

8734-04



FMVSS 201U C-5282
04 NISSAN QLEST
POST TEST
VER 117 HOR 23
20 JAN 04
API

POST IMPACT API

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	06
Test Date:	January 20, 2004
Target Location:	B-Pillar
Target Code:	BP3
Horizontal Impact Angle:	270°
Vertical Impact Angle:	-3°
Ambient Temperature:	24°C
Relative Humidity:	17%
Time of Impact:	15:15
Headform Number:	0062

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	12		mm right	x mm left
On Centerline	19		mm up	



POST-IMPACT BP3 HEADFORM

Free Motion HIC	329.6
HIC(d)	415.1
Impact Velocity (kph)	23.82
HIC T1 (msec)	2.4
HIC T2 (msec)	13.9

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - BP3

FMH Headform 0062

Location: BP3

Test Date: January 20, 2004

Work File: BP3

-----TEST RESULTS-----

Lab Temperature: 24 C

HICd: 415.1

Lab Humidity: 17 %

HIC (36ms): 329.6

Velocity at Impact: 23.82 KPH

t1: 2.4 msec

t2: 13.9 msec

Free Flight Distance: 211.34 mm

Duration: 11.6 msec

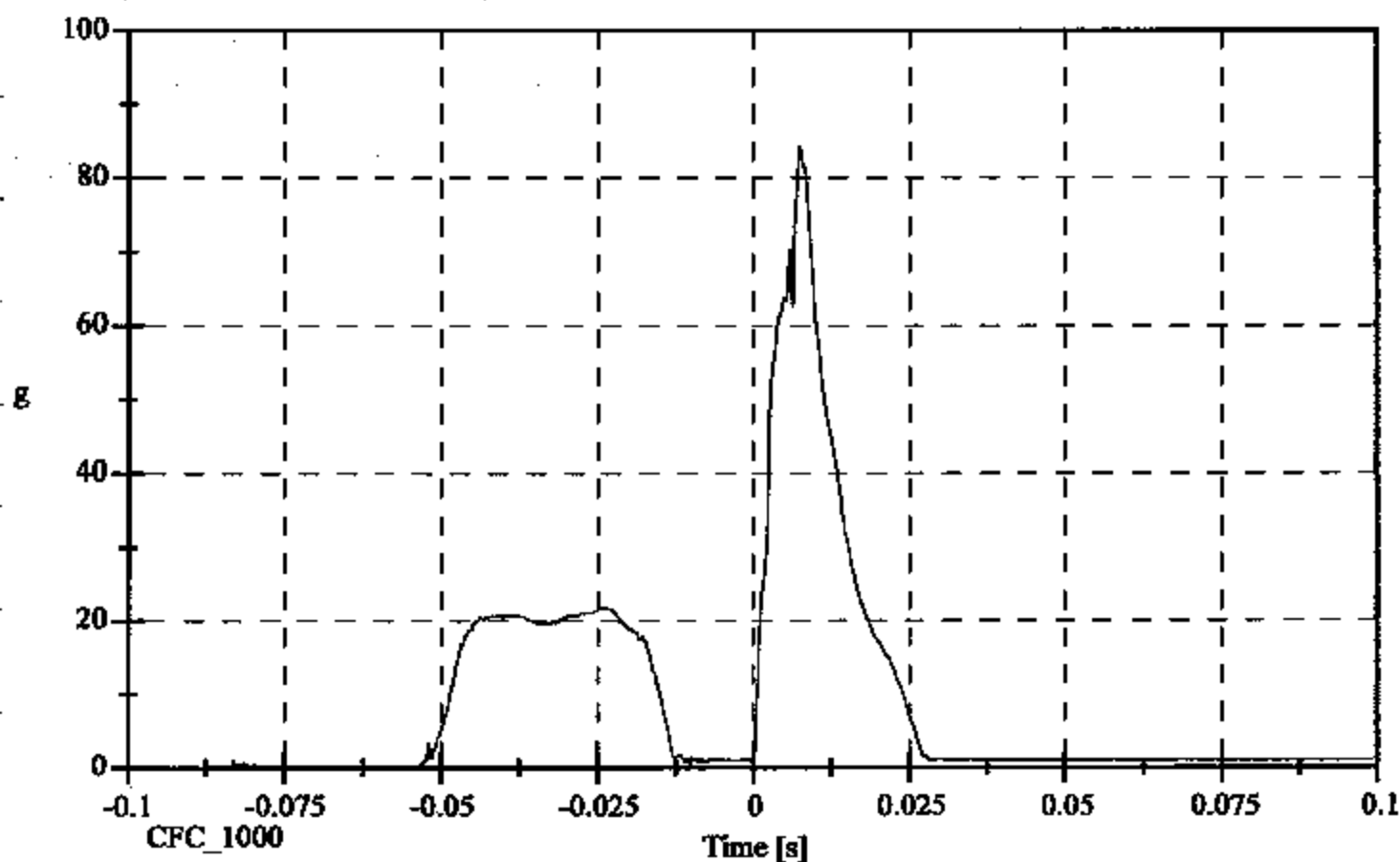
Average Acceleration: 8.7 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 84.4 [g] at 0.007 [s]

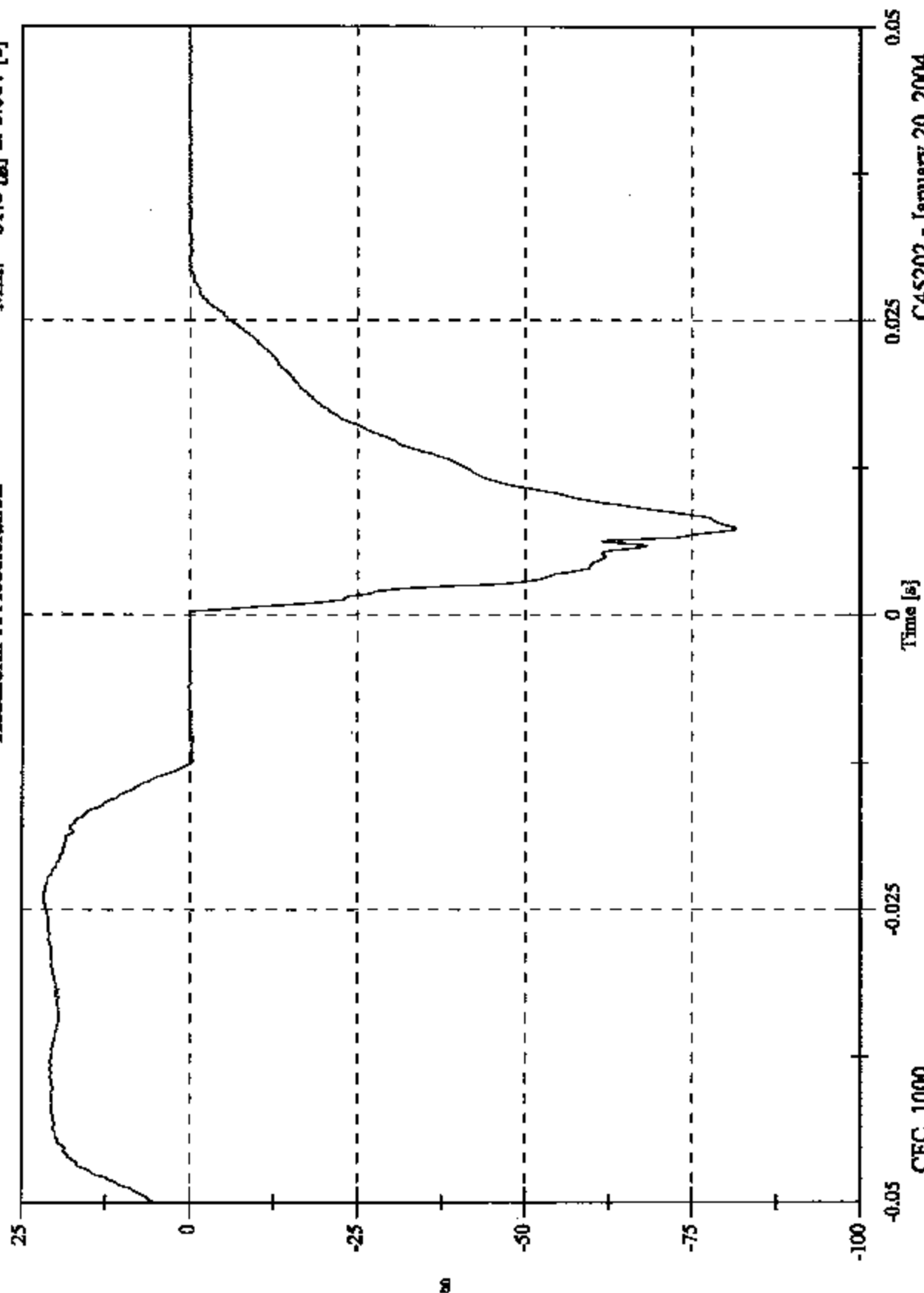
Min: 0.0 [g] at -0.070 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 21.7 [g] at -0.024 [s]
Min: -81.6 [g] at 0.007 [s]

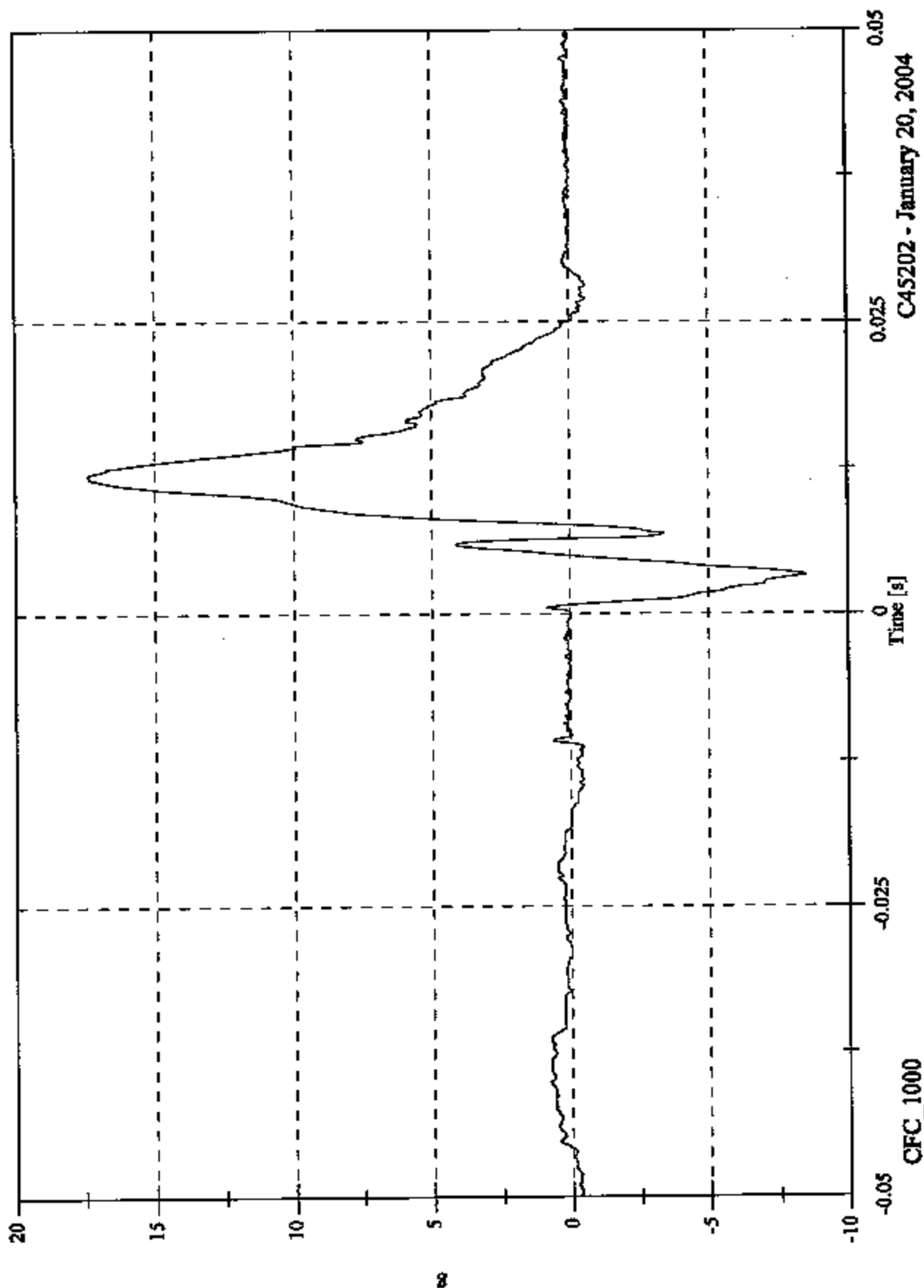


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 17.4 [g] at 0.012 [s]
Min: -8.5 [g] at 0.003 [s]



CFC_1000

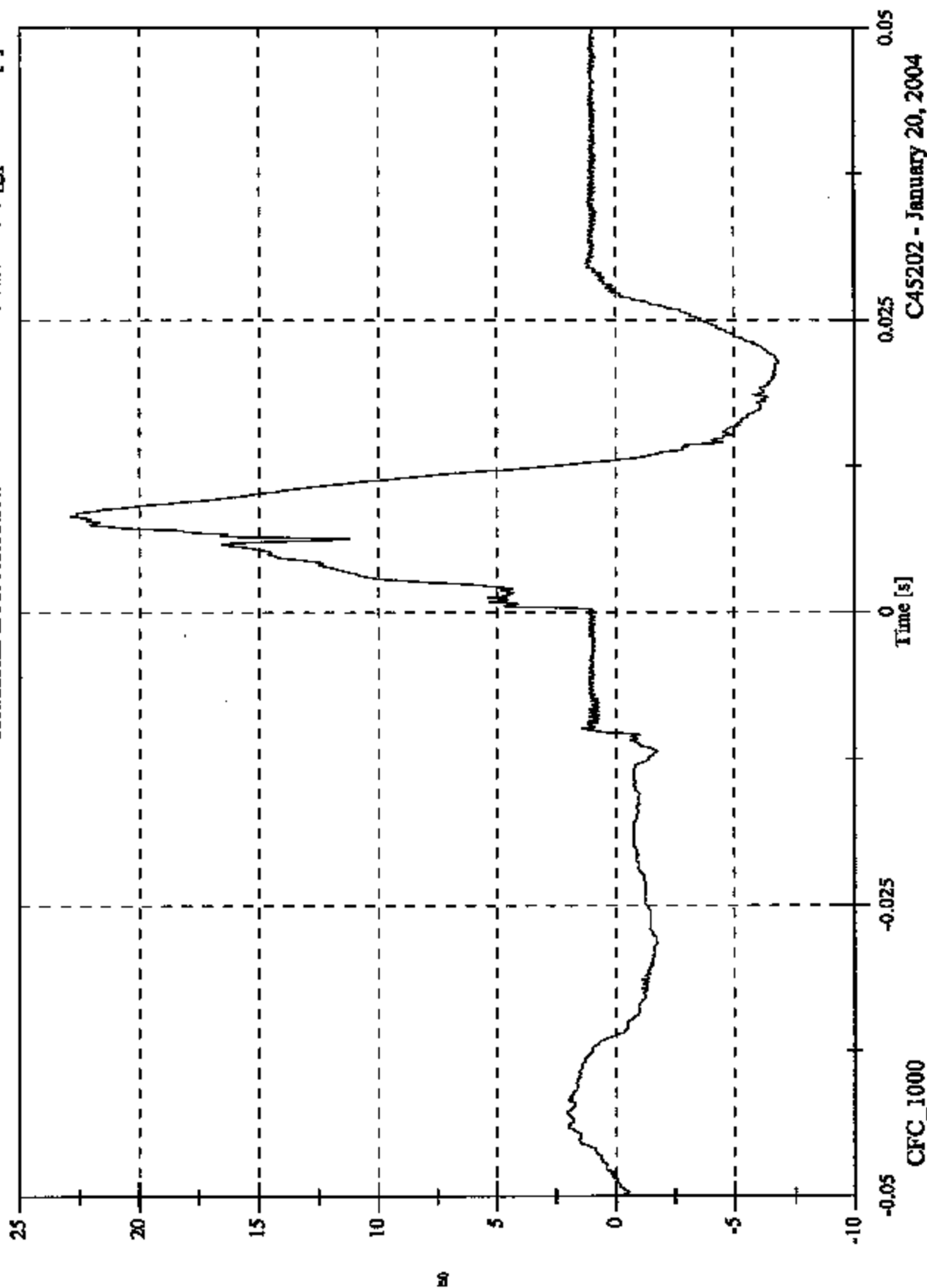
Time [s]

C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Z Acceleration

Max: 22.9 [g] at 0.008 [s]
Min: -6.8 [g] at 0.021 [s]

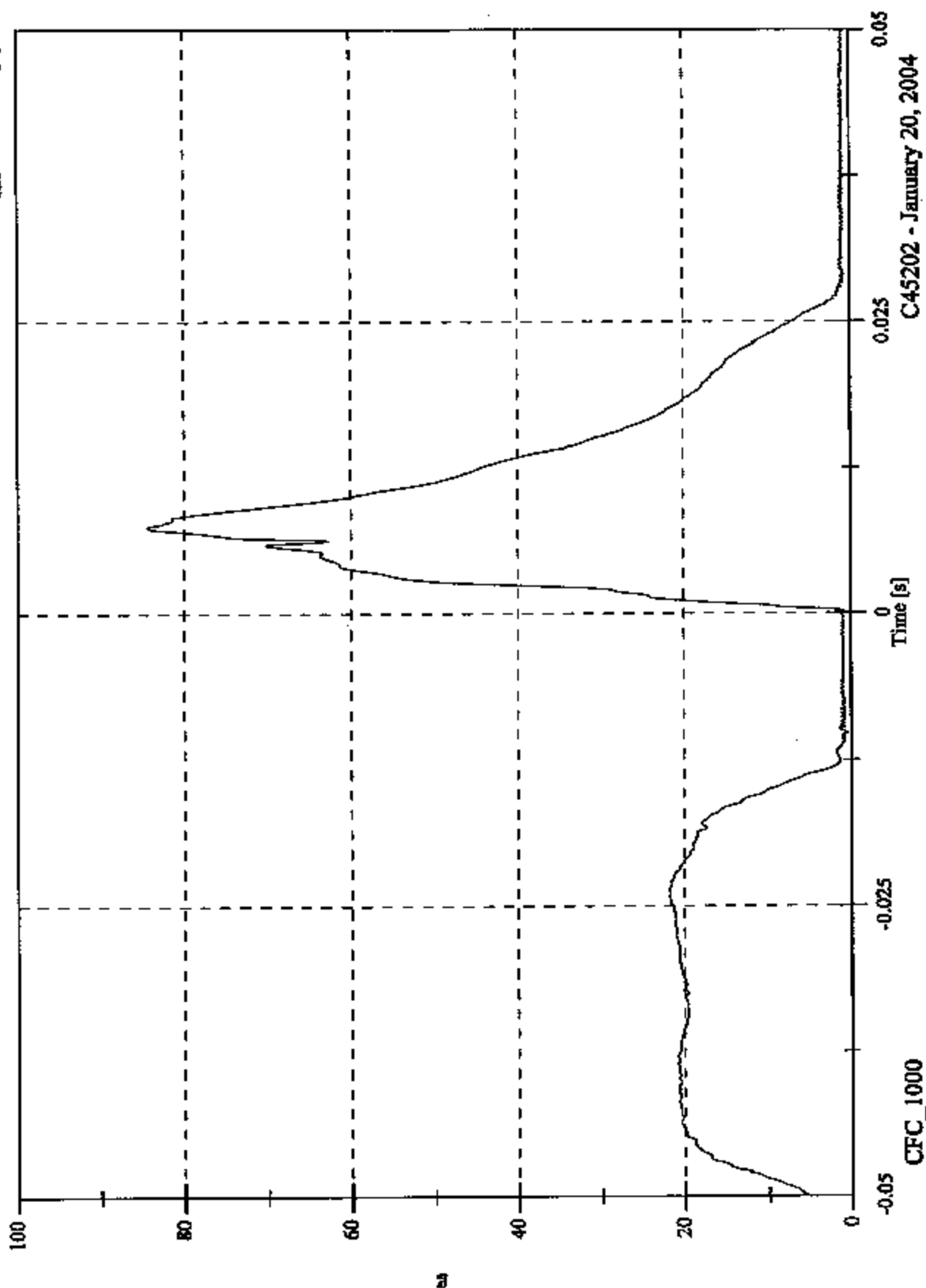


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 84.4 [g] at 0.007 [s]
Min: 0.3 [g] at -0.010 [s]

Headform Resultant

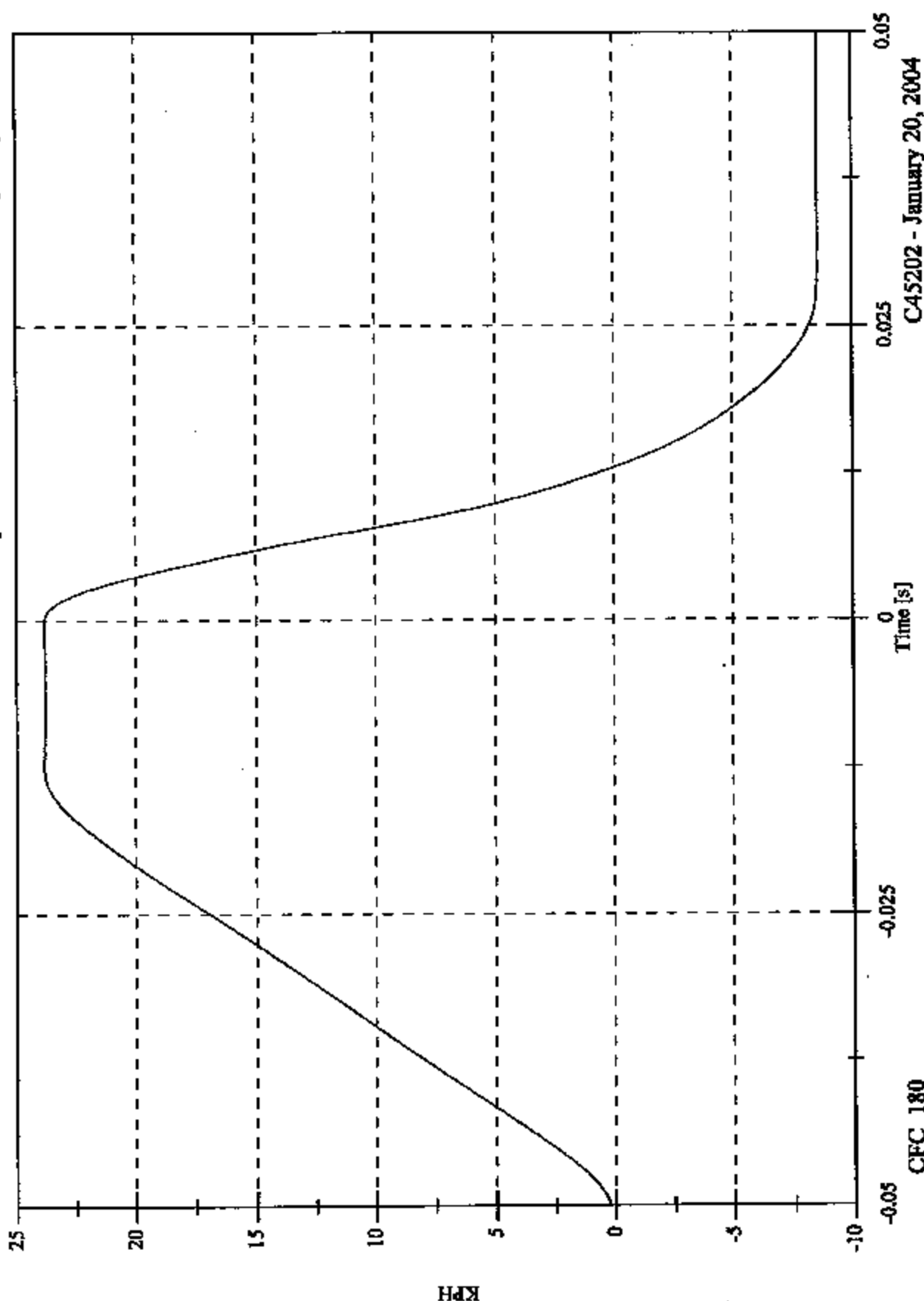


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 23.8 [KPH] at -0.012 [s]
Min: -8.6 [KPH] at 0.042 [s]

Headform Velocity



CFC_180

Time [s]

C45202 - January 20, 2004

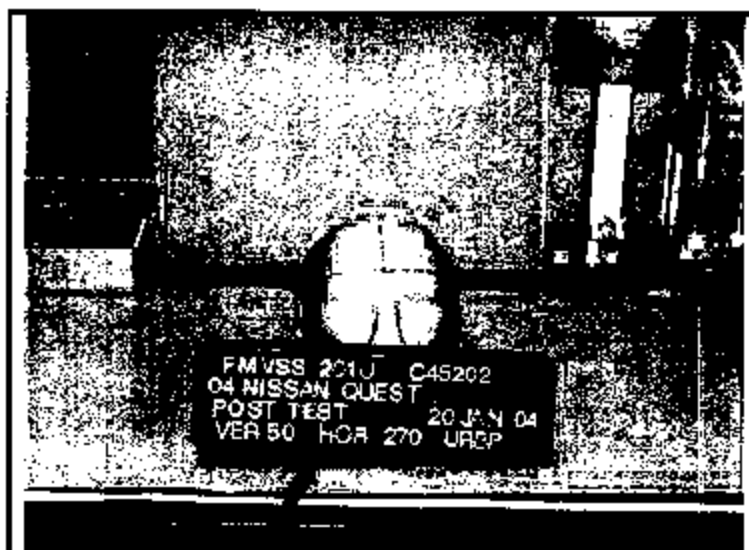


POST-DIAGNOSTIC

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	07
Test Date:	January 20, 2004
Target Location:	Upper Roof
Target Code:	URBP
Horizontal Impact Angle:	270°
Vertical Impact Angle:	50°
Ambient Temperature:	24°C
Relative Humidity:	17%
Time of Impact:	15:45
Headform Number:	1255

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	5	☒ mm right	☐ mm left
On Centerline	14	mm up	



POST-IMPACT URBP HEADFORM

Free Motion HIC	426.5
HIC(d)	488.2
Impact Velocity (kph)	18.65
HIC T1 (msec)	7.7
HIC T2 (msec)	13.3

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - URBP

FMH Headform 1255

Location: URBP

Test Date: January 20, 2004

Work File: URBP

TEST RESULTS

Lab Temperature: 24 C

HICd: 488.2

Lab Humidity: 17 %

HIC (36ms): 426.5

Velocity at Impact: 18.65 KPH

t1: 7.7 msec

t2: 13.3 msec

Free Flight Distance: 213.67 mm

Duration: 5.6 msec

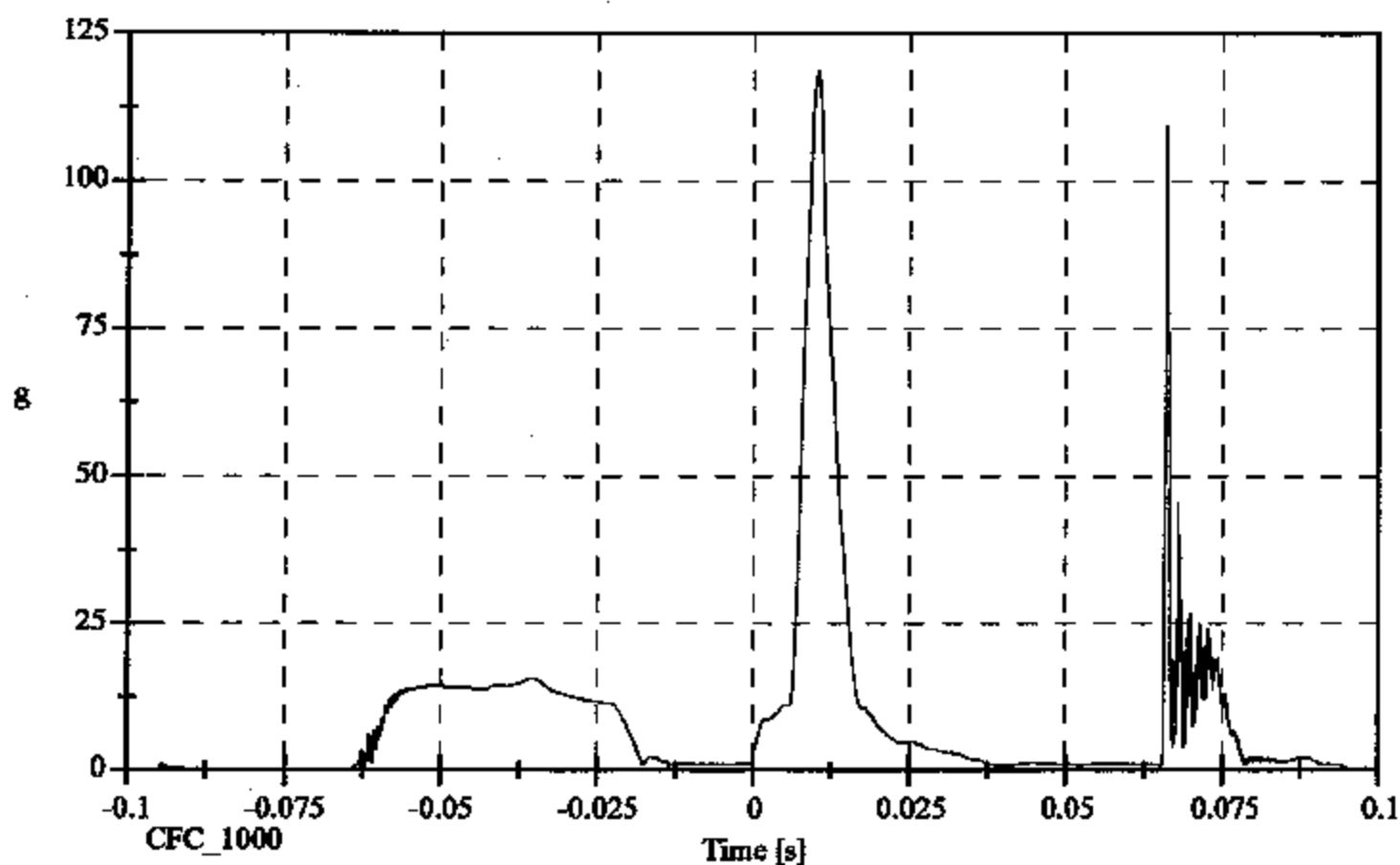
Average Acceleration: 8.3 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 118.7 [g] at 0.010 [s]

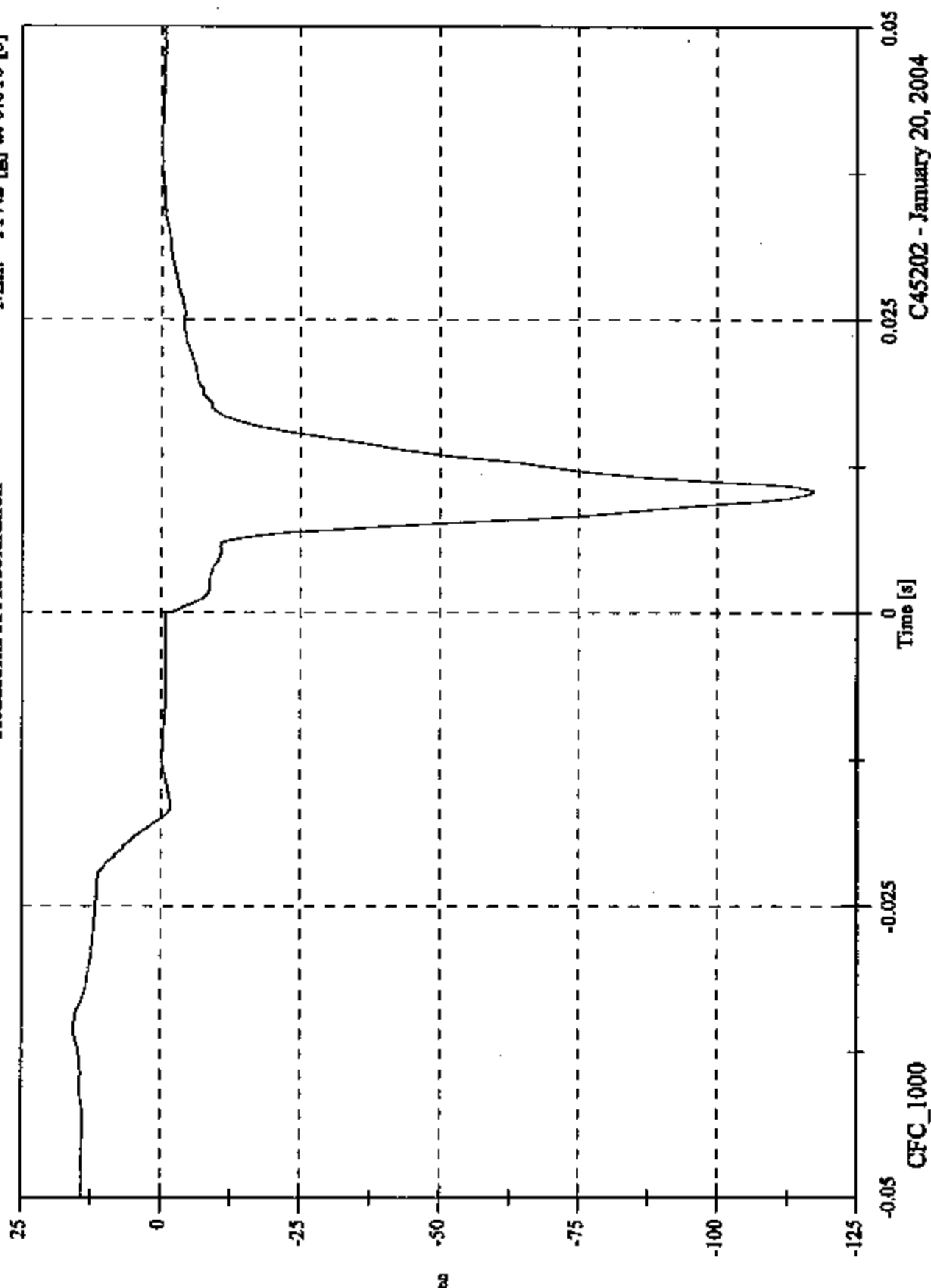
Min: 0.0 [g] at -0.069 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 15.5 [g] at -0.035 [s]
Min: -117.2 [g] at 0.010 [s]



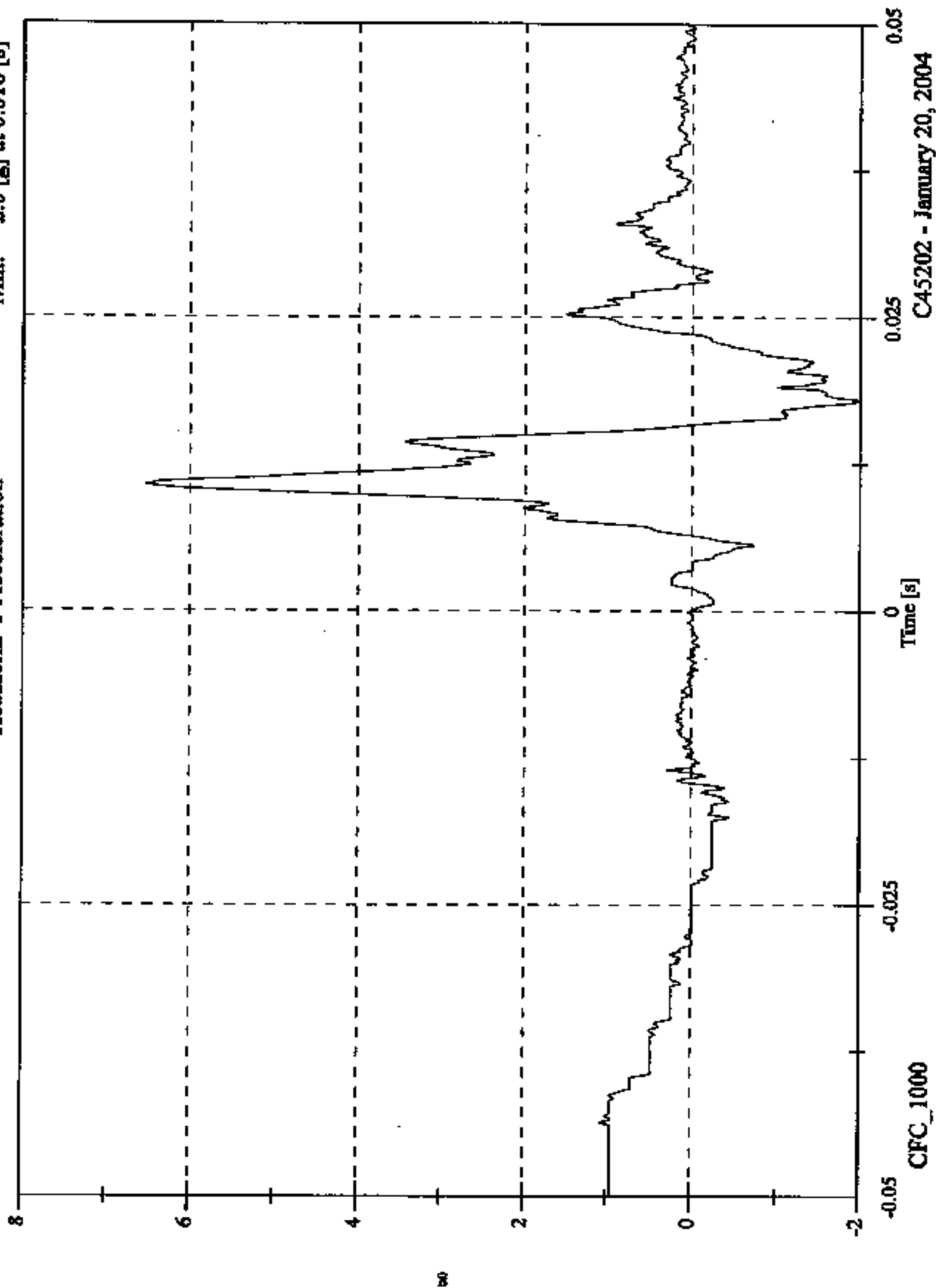
C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 6.5 [g] at 0.011 [s]

Min: -2.0 [g] at 0.018 [s]

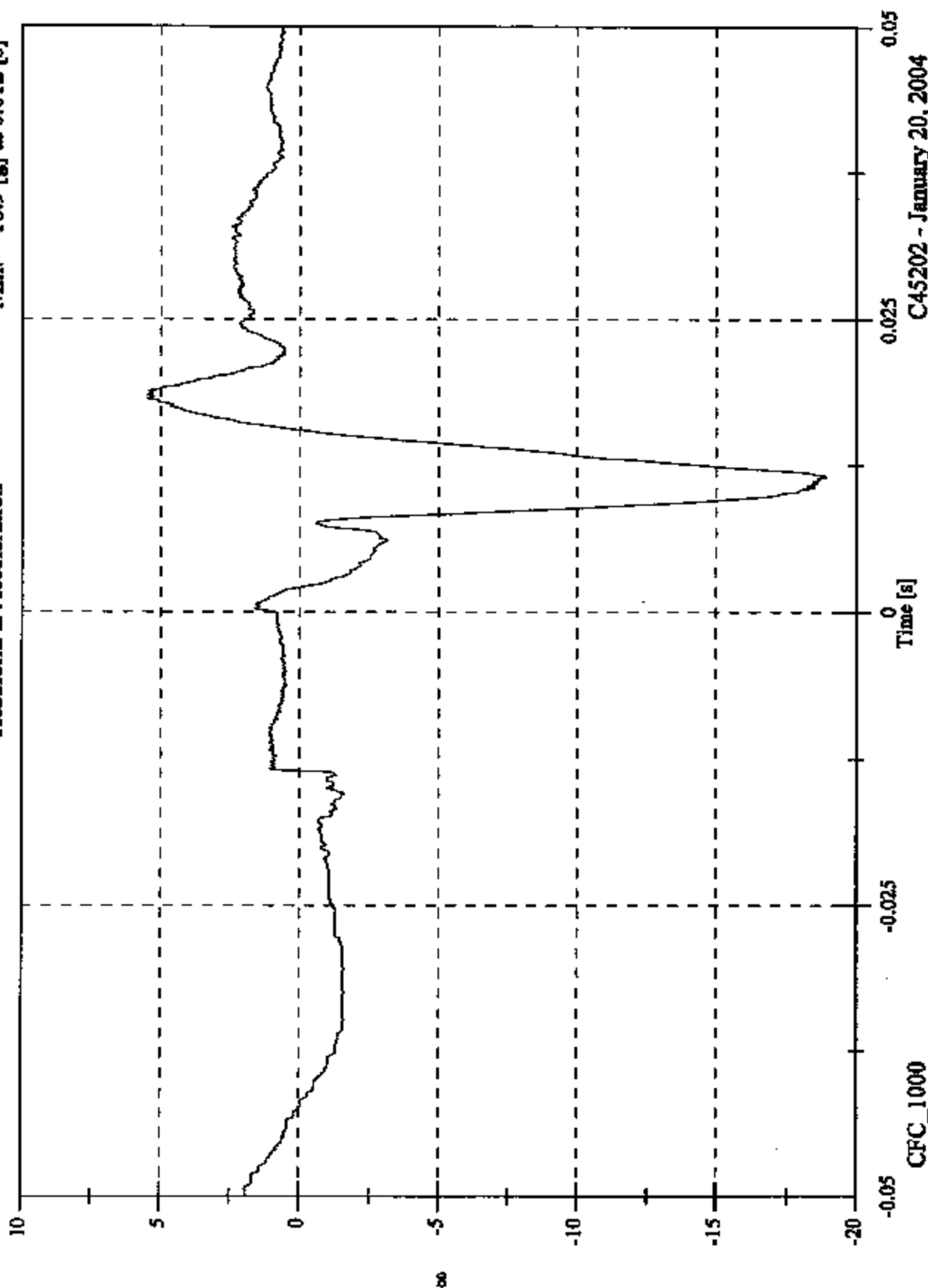


C45202 Driver Side URB Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Z Acceleration

Max: 5.5 [g] at 0.019 [s]
Min: -18.9 [g] at 0.012 [s]



CFC_1000

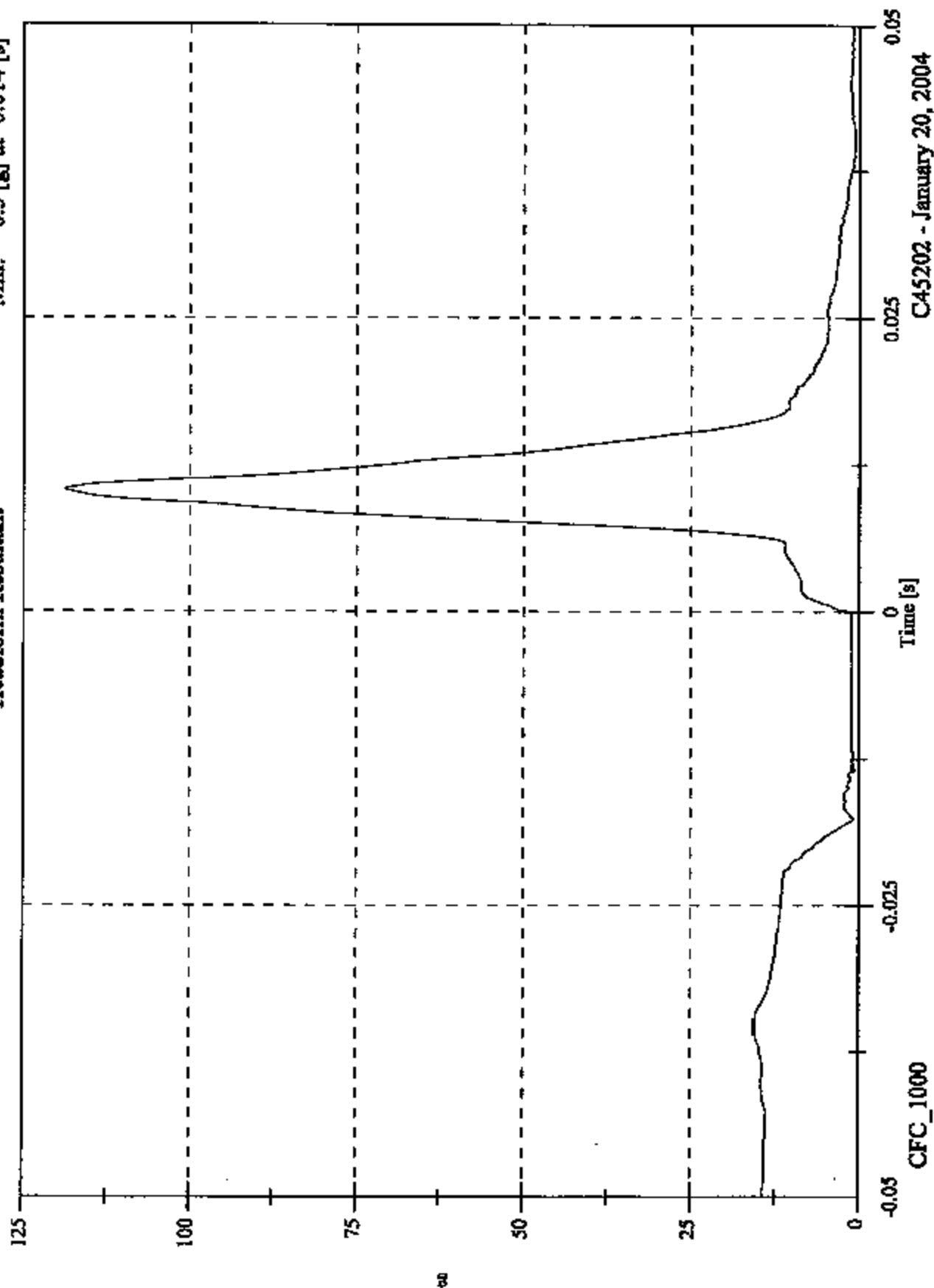
Time [s]

C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 118.7 [g] at 0.010 [s]
Min: 0.5 [g] at -0.014 [s]

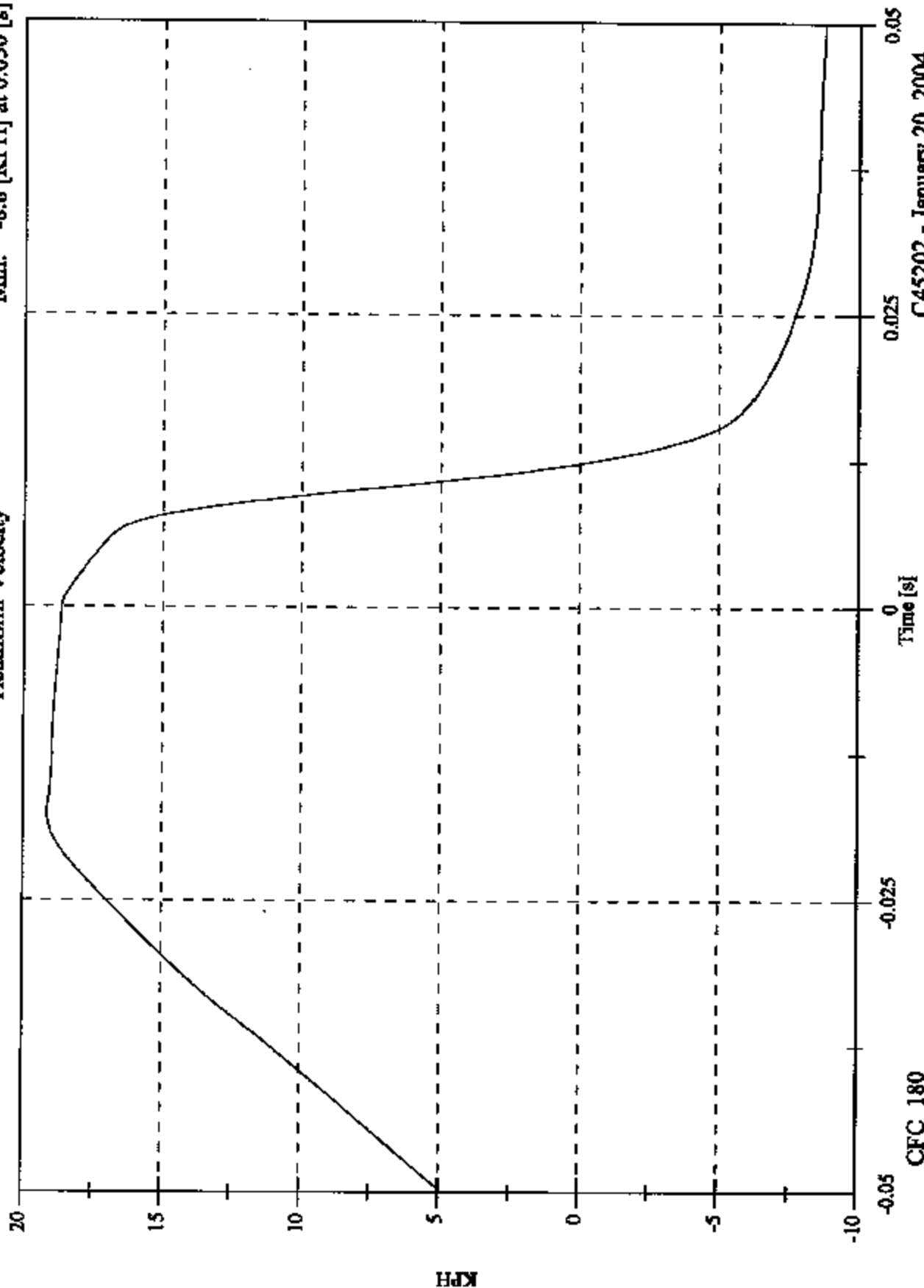


C45202 Driver Side URBP Impact Plot #4

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 19.1 [KPH] at -0.018 [s]
 Min: -8.8 [KPH] at 0.050 [s]

Headform Velocity



CFC_180

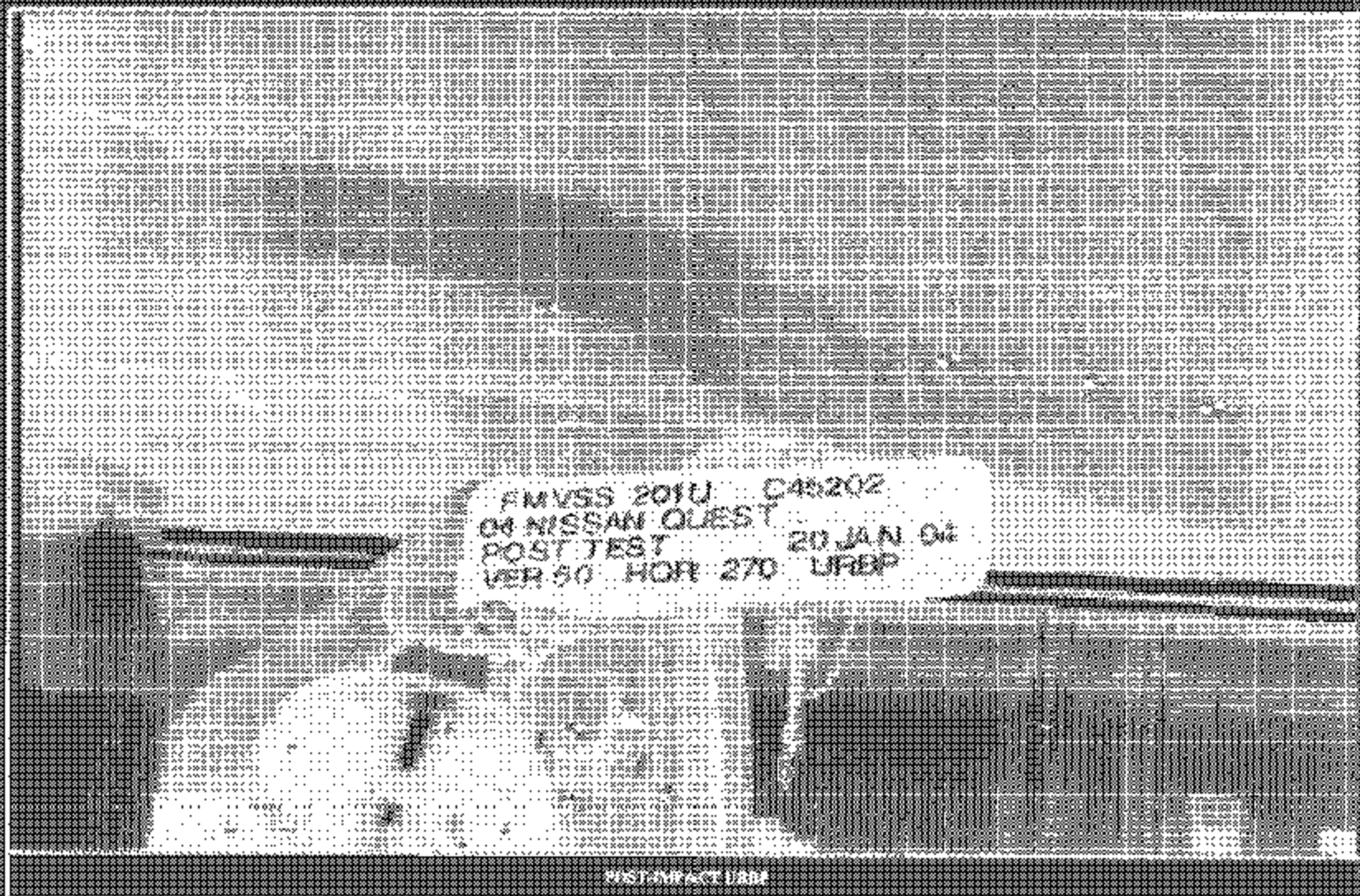
Time [s]

C45202 - January 20, 2004



FBI/ISS 201U C45702

04 NISSAN QUEST
20 JAN 04
FBI TEST
VER 50 MOP STD 0800



FMVSS 201U C45202
04 NISSAN QUEST
POST TEST 20 JAN 01
VER 50 HOR 270 URP

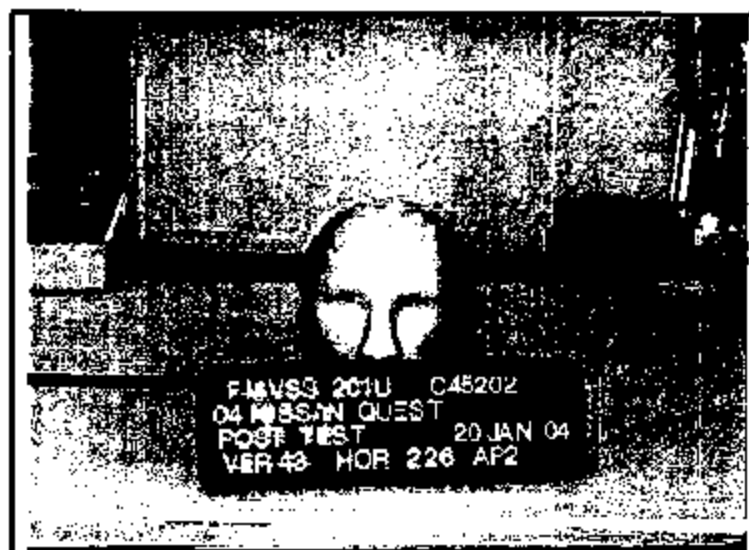
POST-IMPACT URB

8730-01

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	08
Test Date:	January 20, 2004
Target Location:	A-Pillar
Target Code:	AP2
Horizontal Impact Angle:	226°
Vertical Impact Angle:	43°
Ambient Temperature:	24°C
Relative Humidity:	17%
Time of Impact:	16:15
Headform Number:	805

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	4	x	mm right
On Centerline	18		mm up



POST-IMPACT AP2 HEADFORM

Free Motion HIC	477.4
HIC(d)	526.6
Impact Velocity (kph)	18.84
HIC T1 (msec)	1.6
HIC T2 (msec)	7.2

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - AP2

FMH Headform 0805

Location: AP2

Test Date: January 20, 2004

Work File: AP2

TEST RESULTS

Lab Temperature: 24 C

HICd: 526.6

Lab Humidity: 17 %

HIC (36ms): 477.4

Velocity at Impact: 18.84 KPH

t1: 1.6 msec

t2: 7.2 msec

Free Flight Distance: 213.74 mm

Duration: 5.6 msec

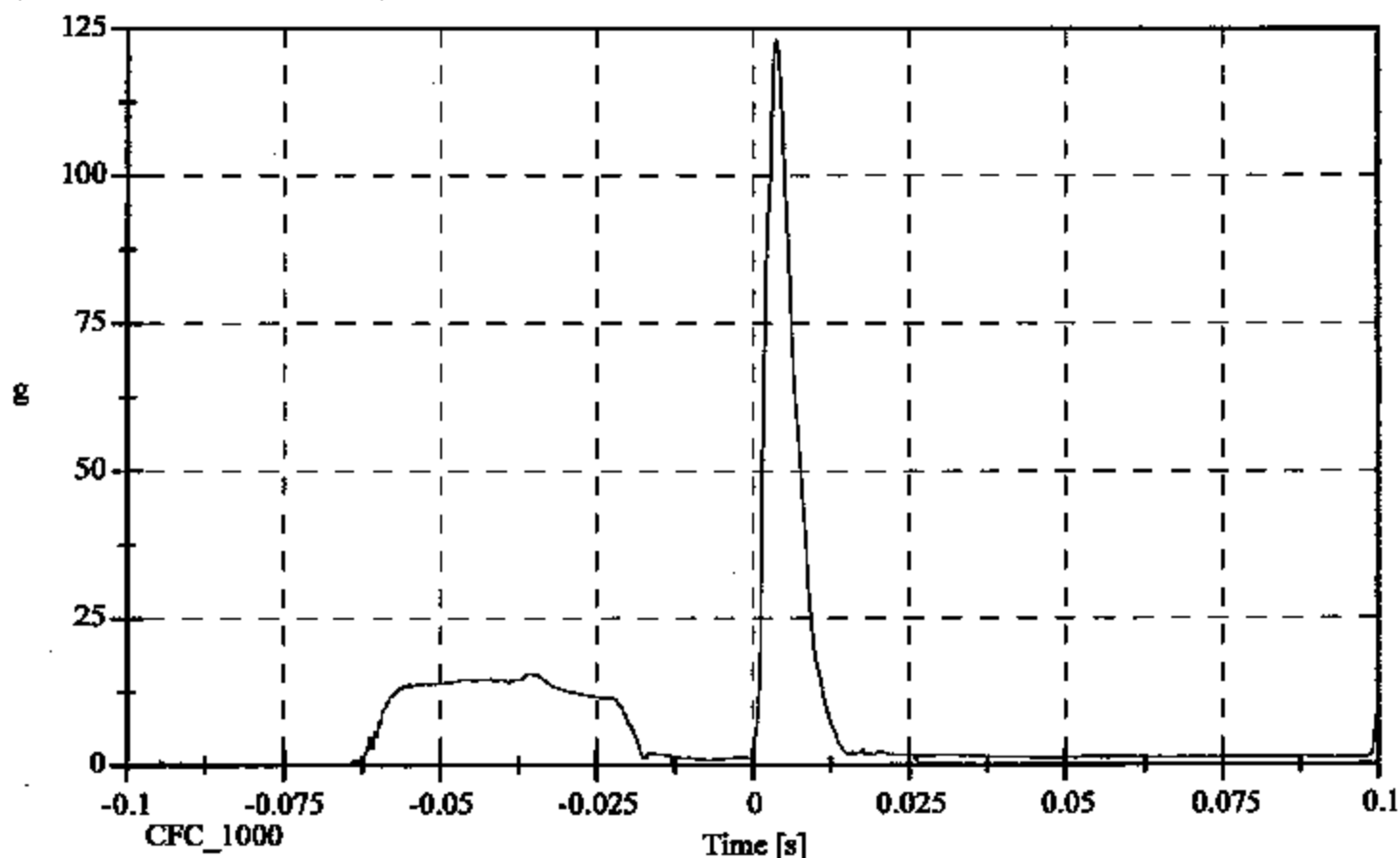
Average Acceleration: 7.0 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 123.2 [g] at 0.004 [s]

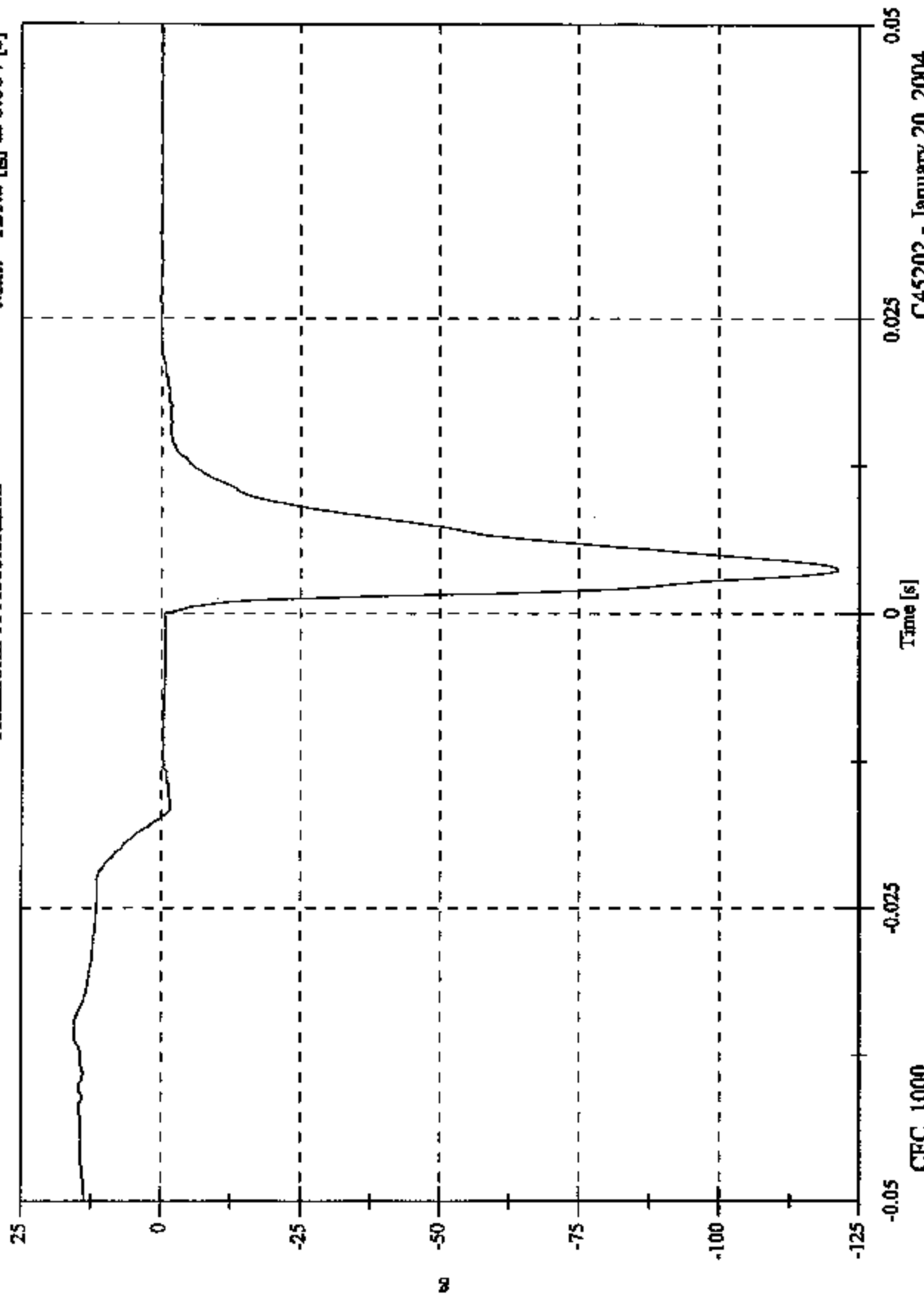
Min: 0.0 [g] at -0.081 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 15.5 [g] at -0.035 [s]
Min: -121.2 [g] at 0.004 [s]



CFC_1000

-0.025

Time [s]

0.025

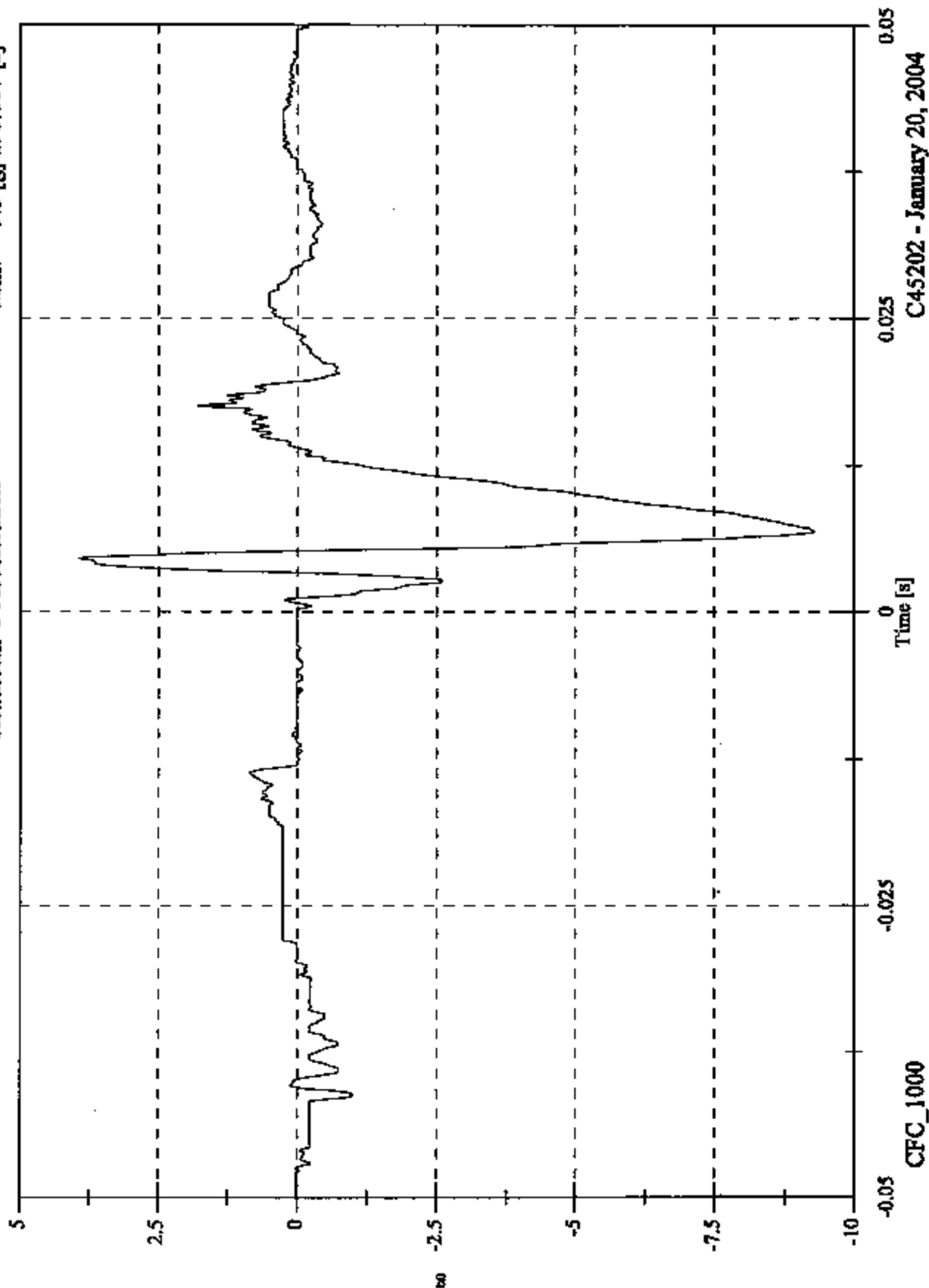
C45202 - January 20, 2004

C45202 Driver Side AP2 Impact Plot #1

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 3.9 [g] at 0.005 [s]
Min: -9.3 [g] at 0.007 [s]

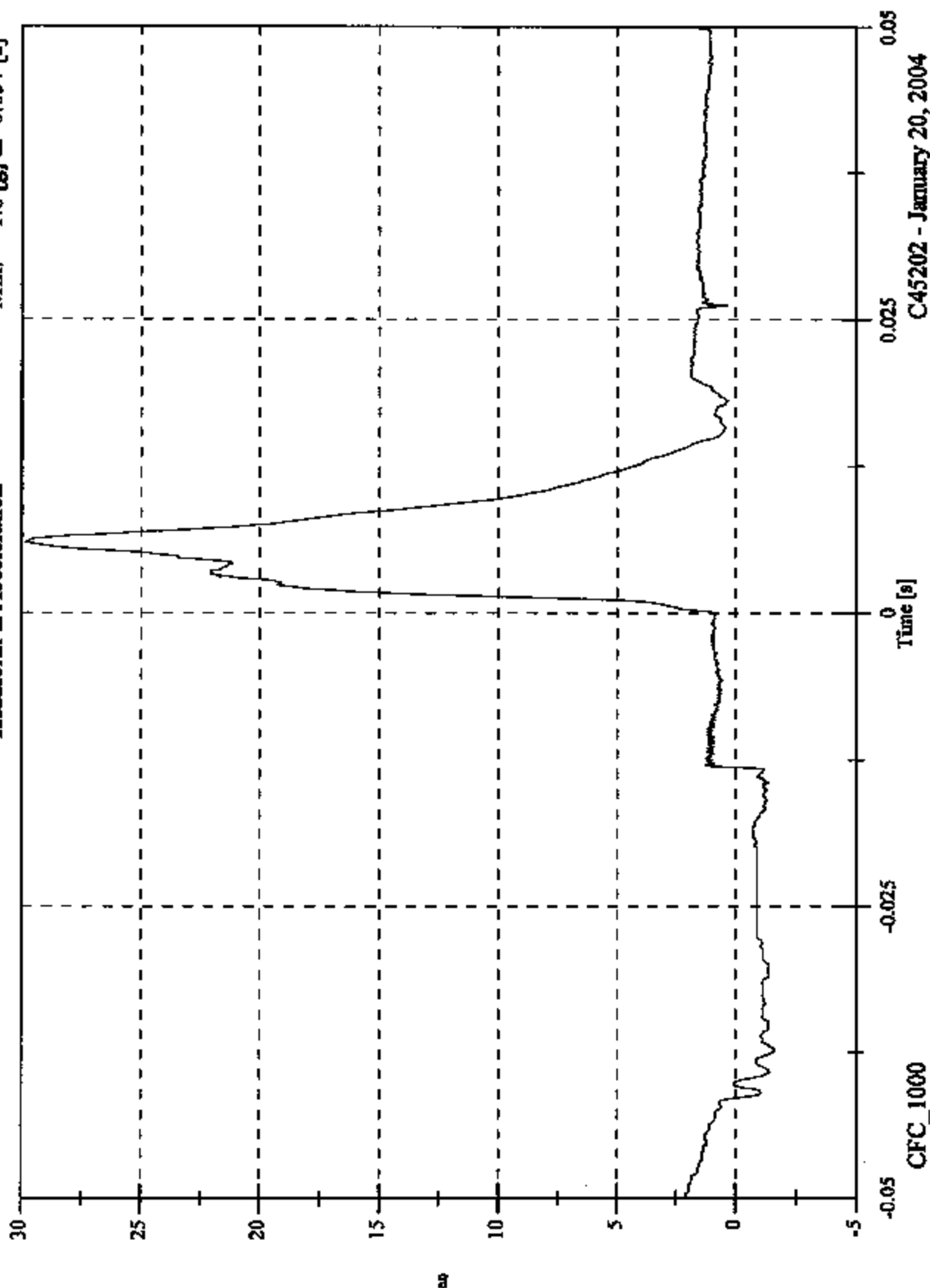


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Z Acceleration

Max: 29.8 [g] at 0.006 [s]
Min: -1.6 [g] at -0.037 [s]

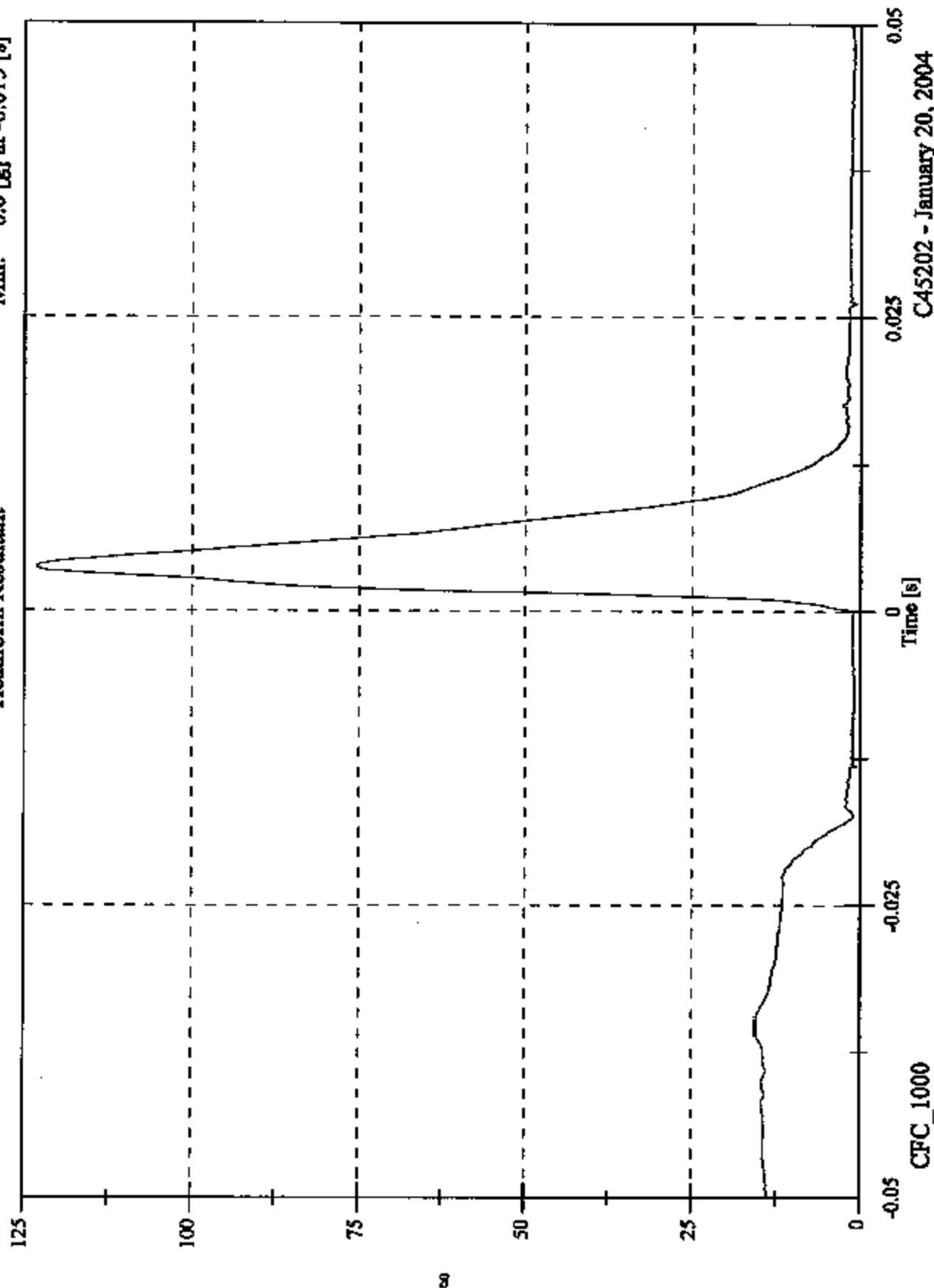


C45202 - January 20, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

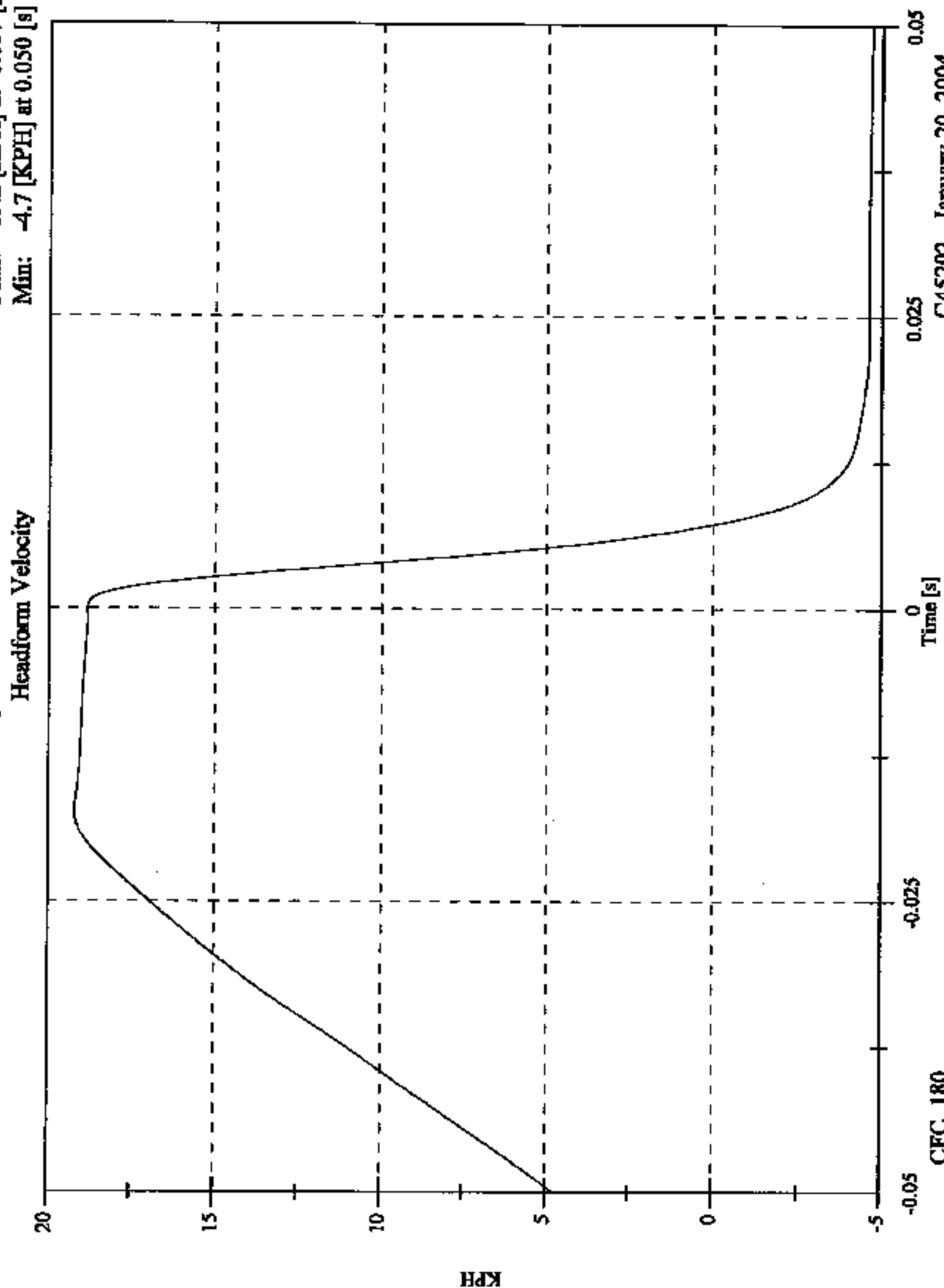
Headform Resultant

Max: 123.2 [g] at 0.004 [s]
Min: 0.6 [g] at -0.013 [s]

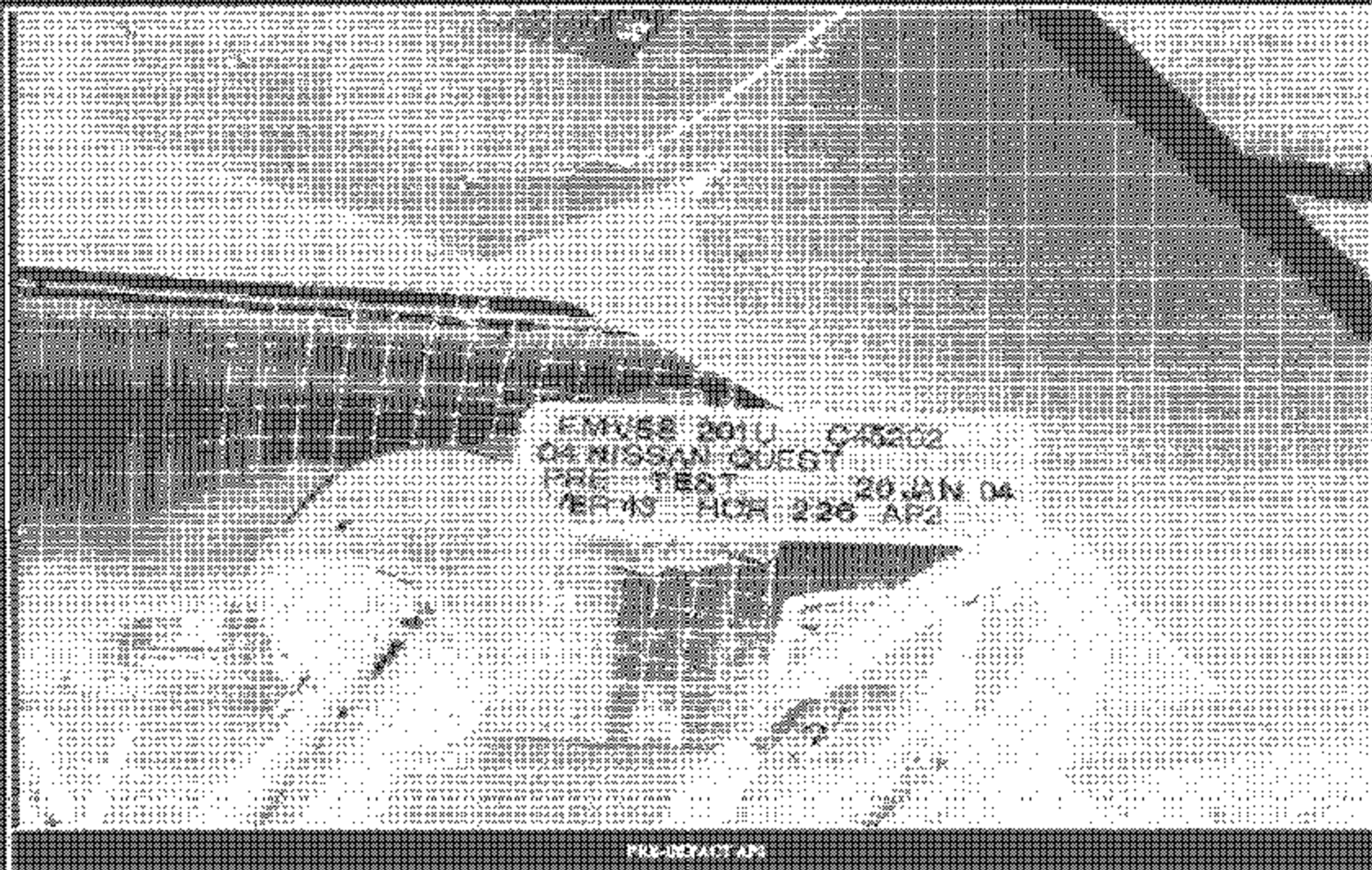


FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 19.2 [KPH] at -0.017 [s]
Min: -4.7 [KPH] at 0.050 [s]

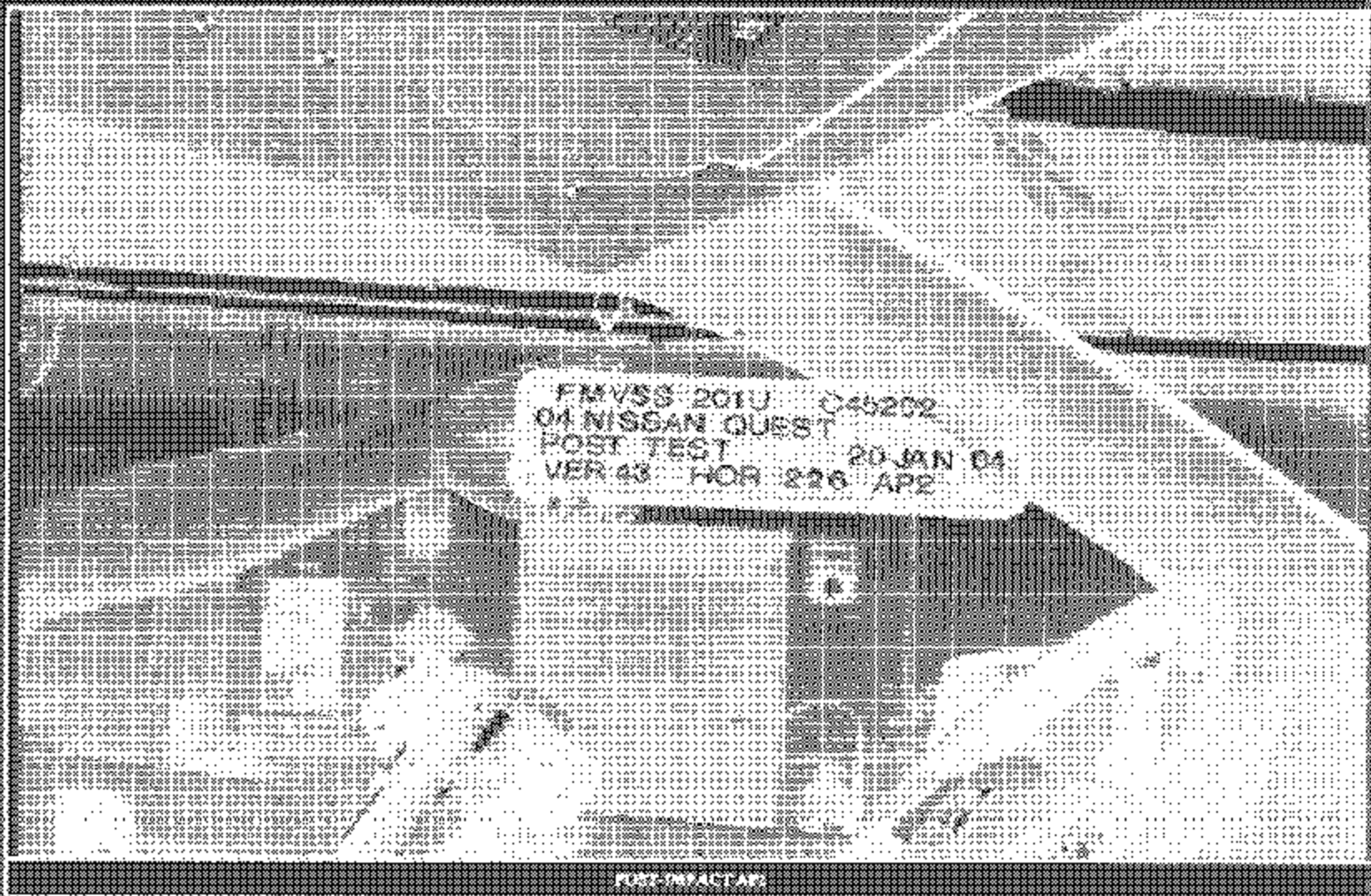


C45202 Driver Side AP2 Impact Plot #5



FMVSS 201U CAB202
DA NISSAN QUEST
PRE TEST 20 JAN 04
REF ID: HCH 226 AP2

FILE IMPACT AP2



FMVSS 201U C45202
04 NISSAN QUEST
POST TEST
20 JAN 04
VER 43 HOR 226 AP2

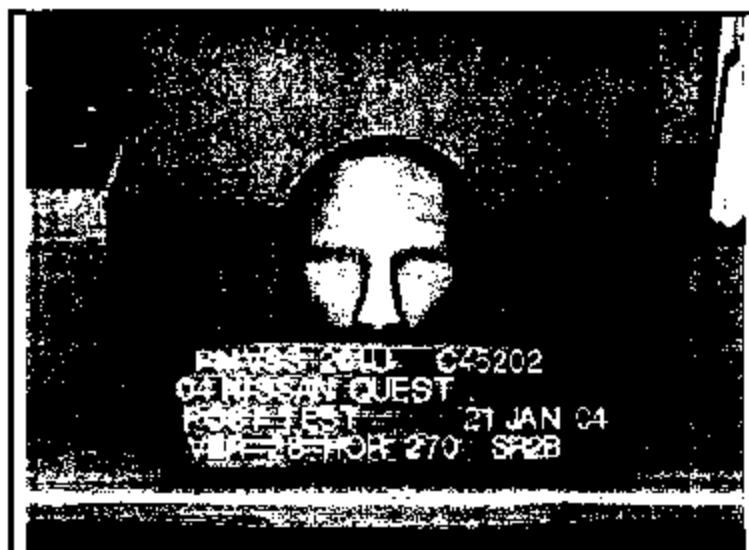
POST-IMPACT AP2

871044

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	09
Test Date:	January 21, 2004
Target Location:	Side Rail
Target Code:	SR2B
Horizontal Impact Angle:	270°
Vertical Impact Angle:	28°
Ambient Temperature:	19°C
Relative Humidity:	11%
Time of Impact:	8:55
Headform Number:	0642

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	8	mm right	x	mm left
On Centerline	27	mm up		



POST-IMPACT SR2B HEADFORM

Free Motion HIC	358.0
HIC(d)	436.5
Impact Velocity (kph)	18.63
HIC T1 (msec)	6.1
HIC T2 (msec)	12.5

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - SR2B

FMH Headform 0642

Location: SR2B

Test Date: January 21, 2004

Work File: SR2B

TEST RESULTS

Lab Temperature: 19 C

HICd: 436.5

Lab Humidity: 11 %

HIC (36ms): 358.0

Velocity at Impact: 18.63 KPH

t1: 6.1 msec

t2: 12.5 msec

Free Flight Distance: 212.71 mm

Duration: 6.4 msec

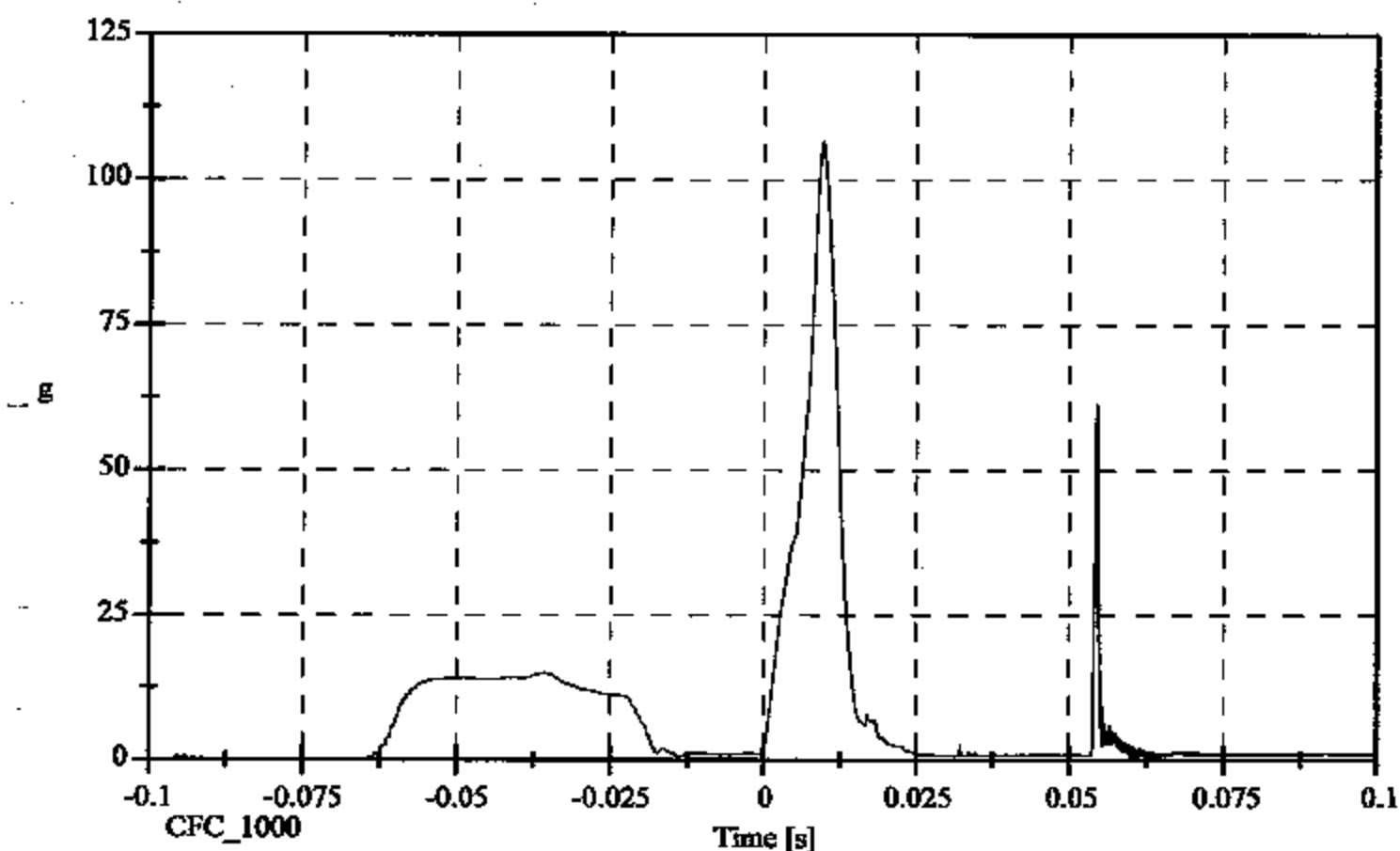
Average Acceleration: 7.2 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 106.6 [g] at 0.010 [s]

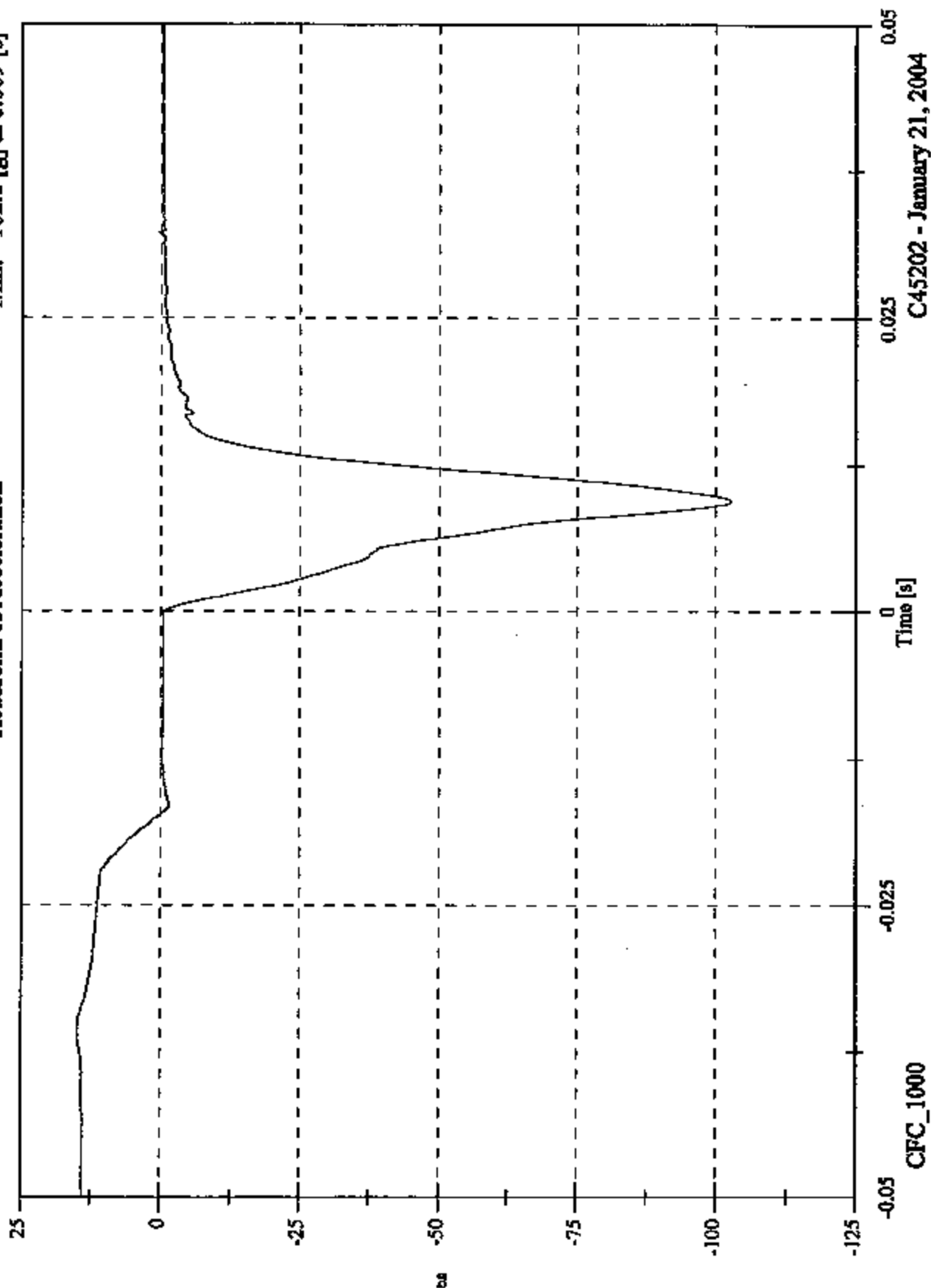
Min: 0.0 [g] at -0.083 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 14.9 [g] at -0.035 [s]
Min: -102.8 [g] at 0.009 [s]

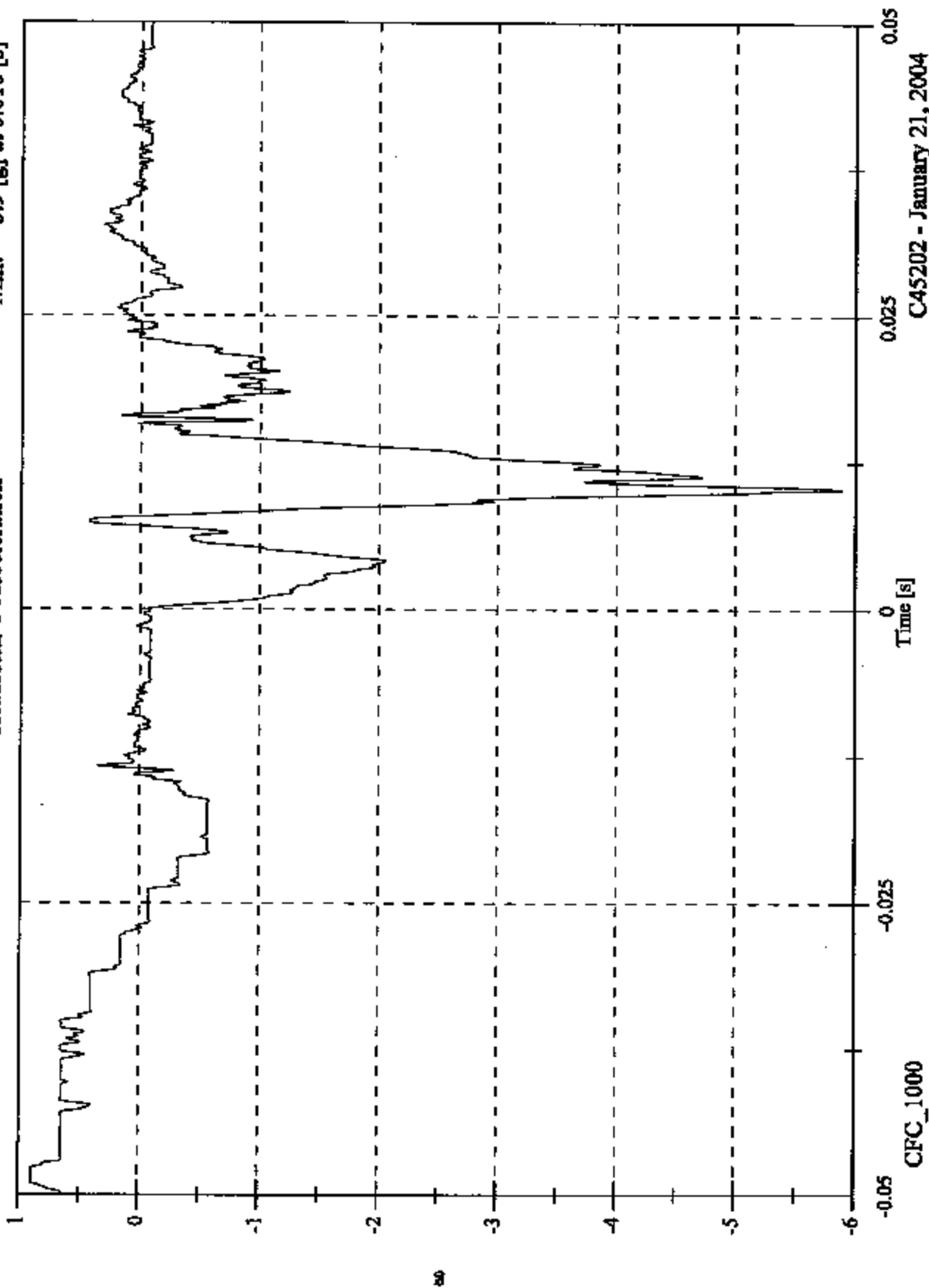


C45202 Driver Side SR2B Impact Plot #1

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 0.9 [g] at -0.048 [s]
Min: -5.9 [g] at 0.010 [s]

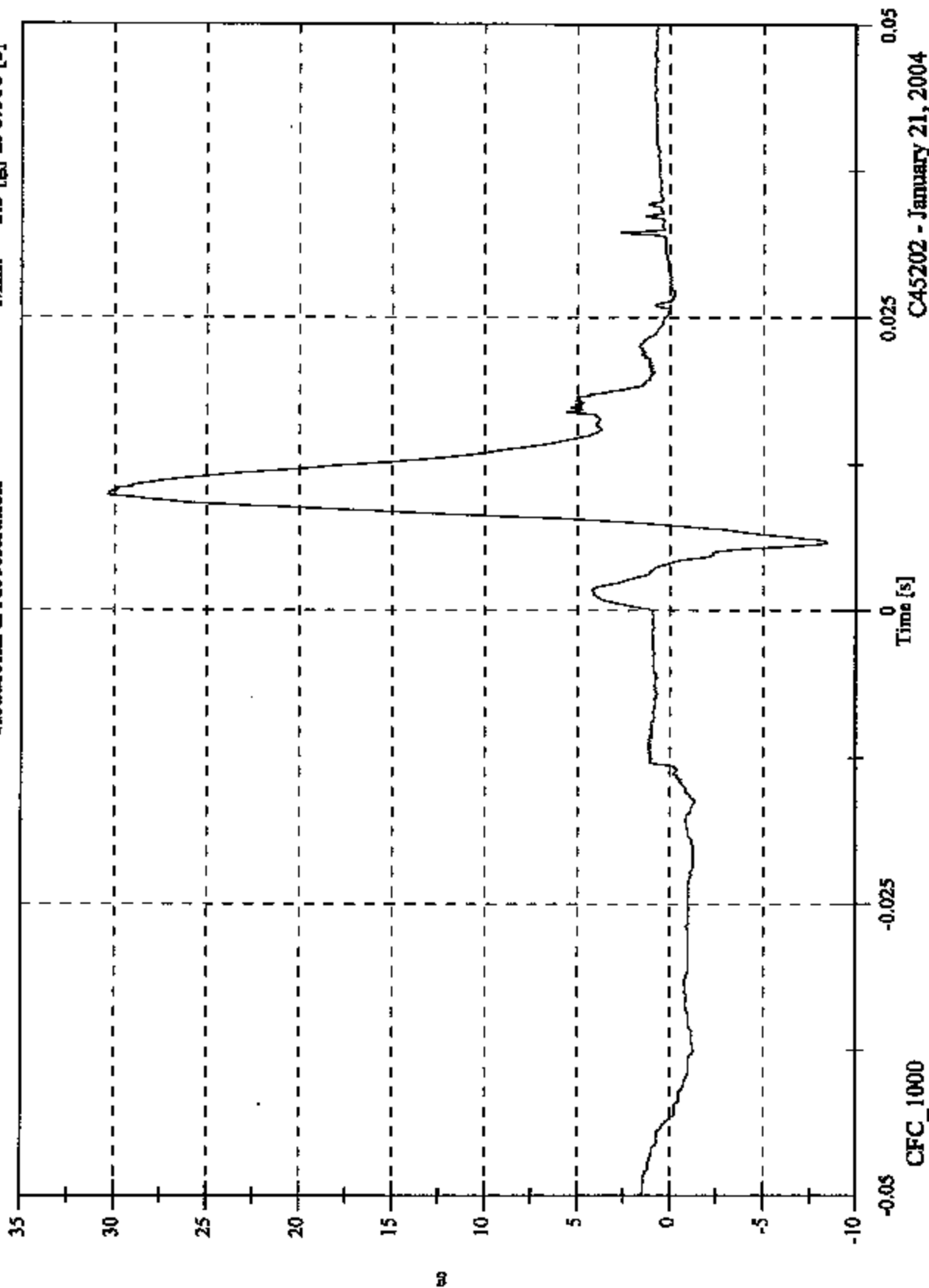


C45202 - January 21, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 30.4 [g] at 0.010 [s]
Min: -8.5 [g] at 0.006 [s]

Headform Z Acceleration

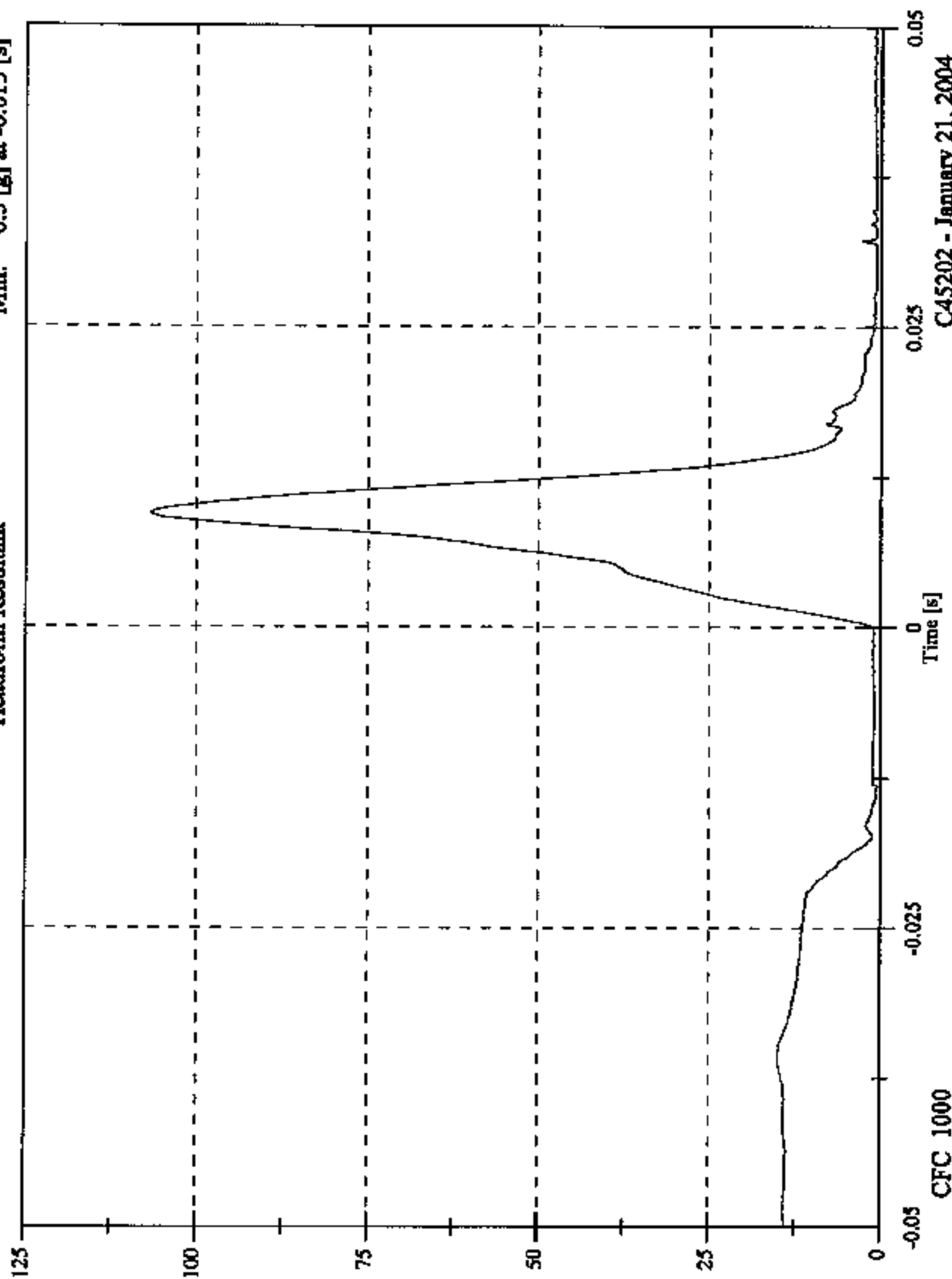


C45202 - January 21, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 106.6 [g] at 0.010 [s]
Min: 0.5 [g] at -0.013 [s]



CFC_1000

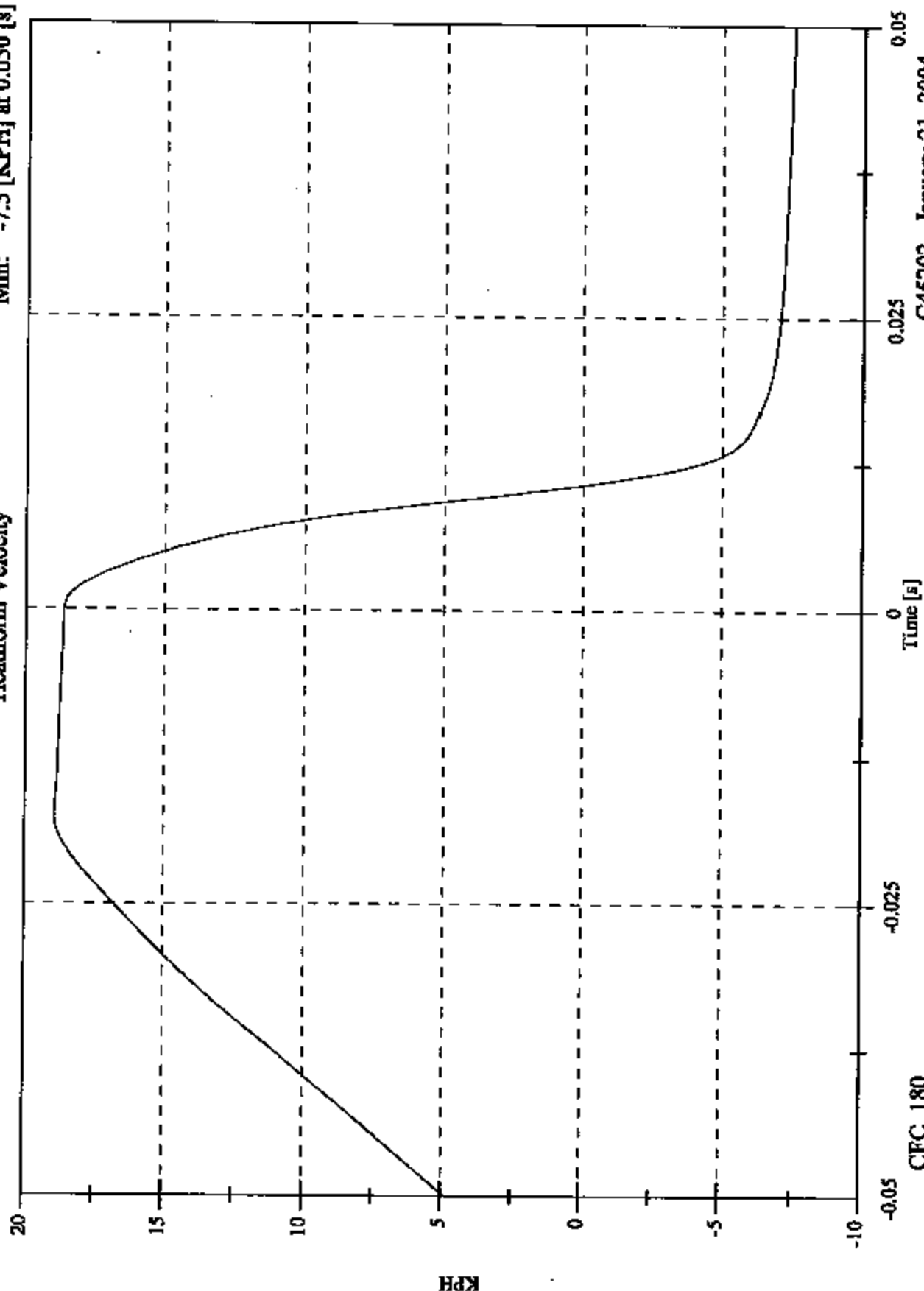
Time [s]

C45202 - January 21, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 18.9 [KPH] at -0.017 [s]
 Min: -7.5 [KPH] at 0.050 [s]

Headform Velocity



CFC_180

Time [s]

C45202 - January 21, 2004

FM VSS 201U C45202
M NISSAN QUEST
PRE TEST 21 JAN 04
VER 28 ROM 270 SP028

PRE-IMPACT SKID

FMVSS 201U C45202
04 NISSAN QUEST
POST TEST
VER 28 NOV 20 21 JAN 04
SP28

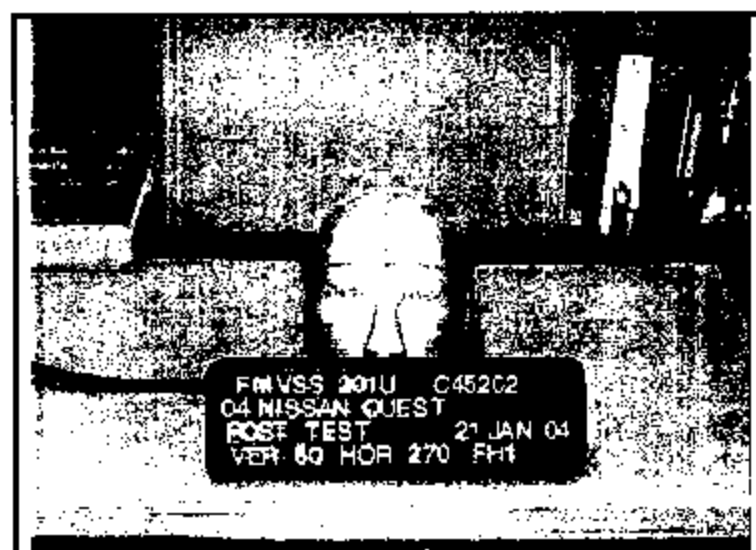
POST IMPACT SKI

87-00-04

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Nissan Quest 3.5S
VIN:	5N1BV28U04N316161
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Smoke

Test Number:	10
Test Date:	January 21, 2004
Target Location:	Front Header
Target Code:	FH1
Horizontal Impact Angle:	180°
Vertical Impact Angle:	50°
Ambient Temperature:	19°C
Relative Humidity:	11%
Time of Impact:	9:40
Headform Number:	1255

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	7	mm right	x mm left
On Centerline	22	mm up	



POST-IMPACT FH1 HEADFORM

Free Motion HIC	917.1
HIC(d)	858.3
Impact Velocity (kph)	23.74
HIC T1 (msec)	2.4
HIC T2 (msec)	6.1

FMVSS 201U IMPACT TEST - 2004 Nissan Quest C45202 - FH1

FMH Headform 1255

Location: FH1

Test Date: January 21, 2004

Work File: FH1

TEST RESULTS

Lab Temperature: 19 C

HICd: 858.3

Lab Humidity: 11 %

HIC (36ms): 917.1

Velocity at Impact: 23.73 KPH

t1: 2.4 msec

t2: 6.1 msec

Free Flight Distance: 207.65 mm

Duration: 3.7 msec

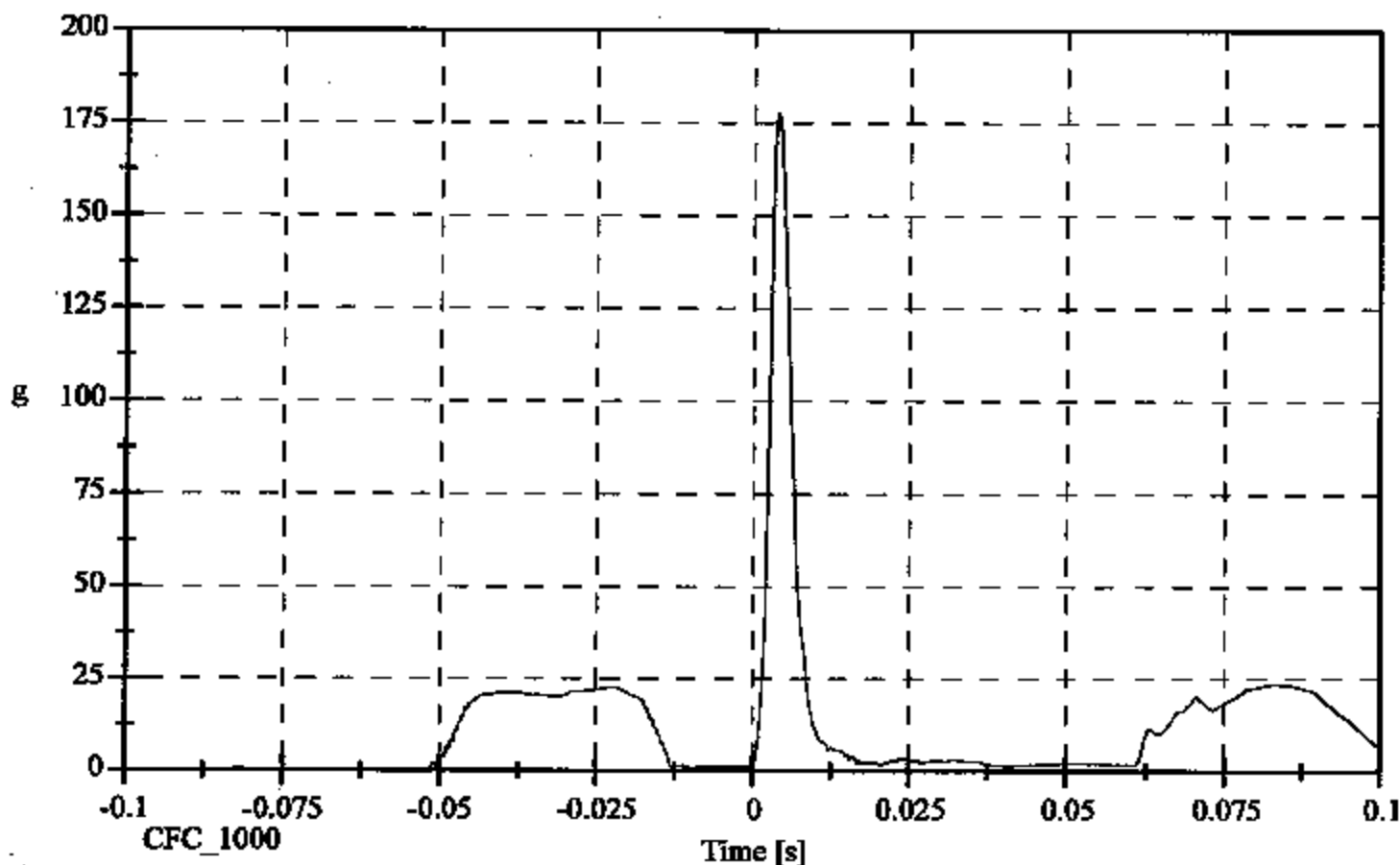
Average Acceleration: 11.2 g

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Resultant

Max: 177.6 [g] at 0.004 [s]

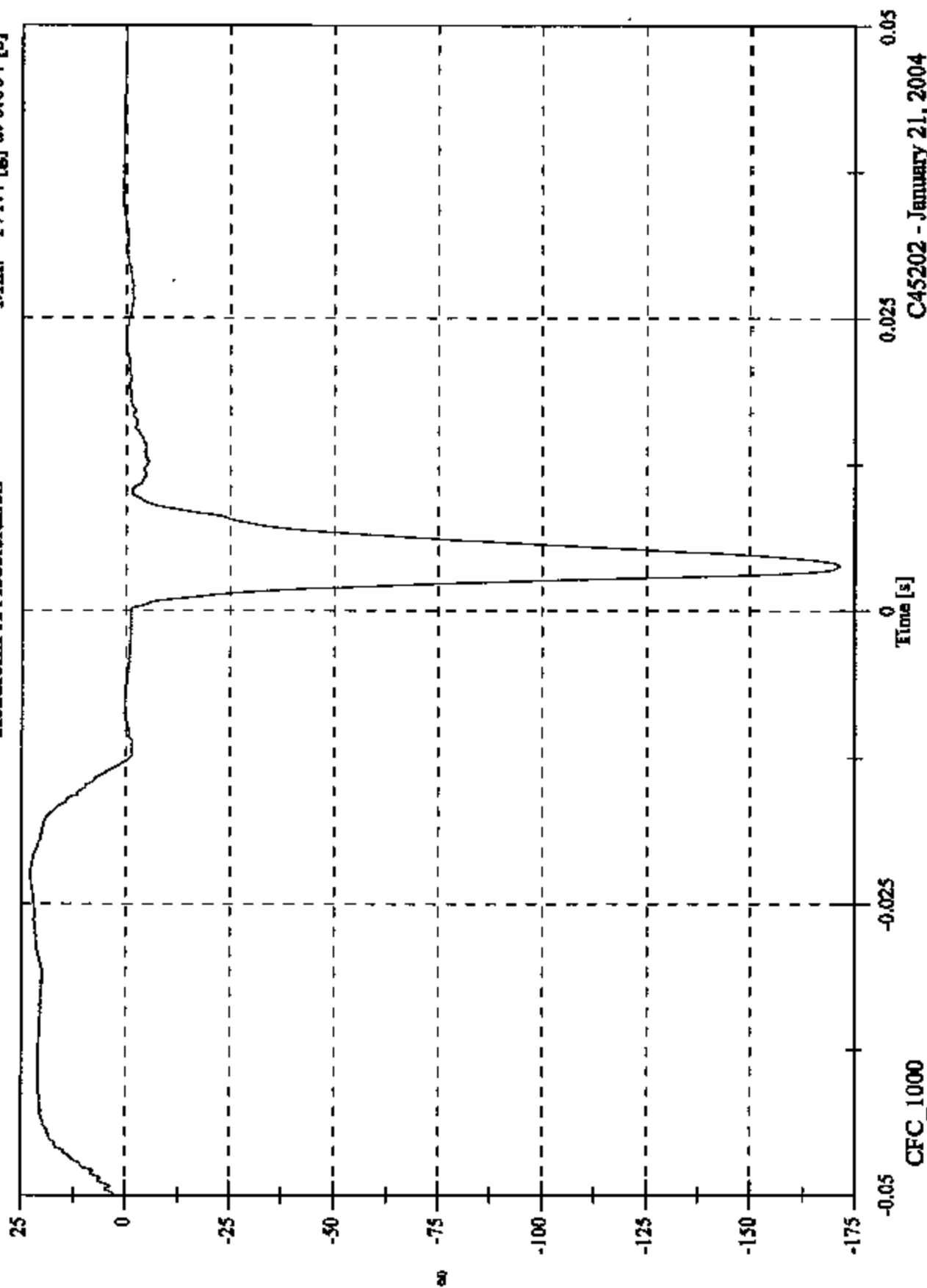
Min: 0.0 [g] at -0.093 [s]



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform X Acceleration

Max: 22.8 [g] at -0.023 [s]
Min: -171.4 [g] at 0.004 [s]

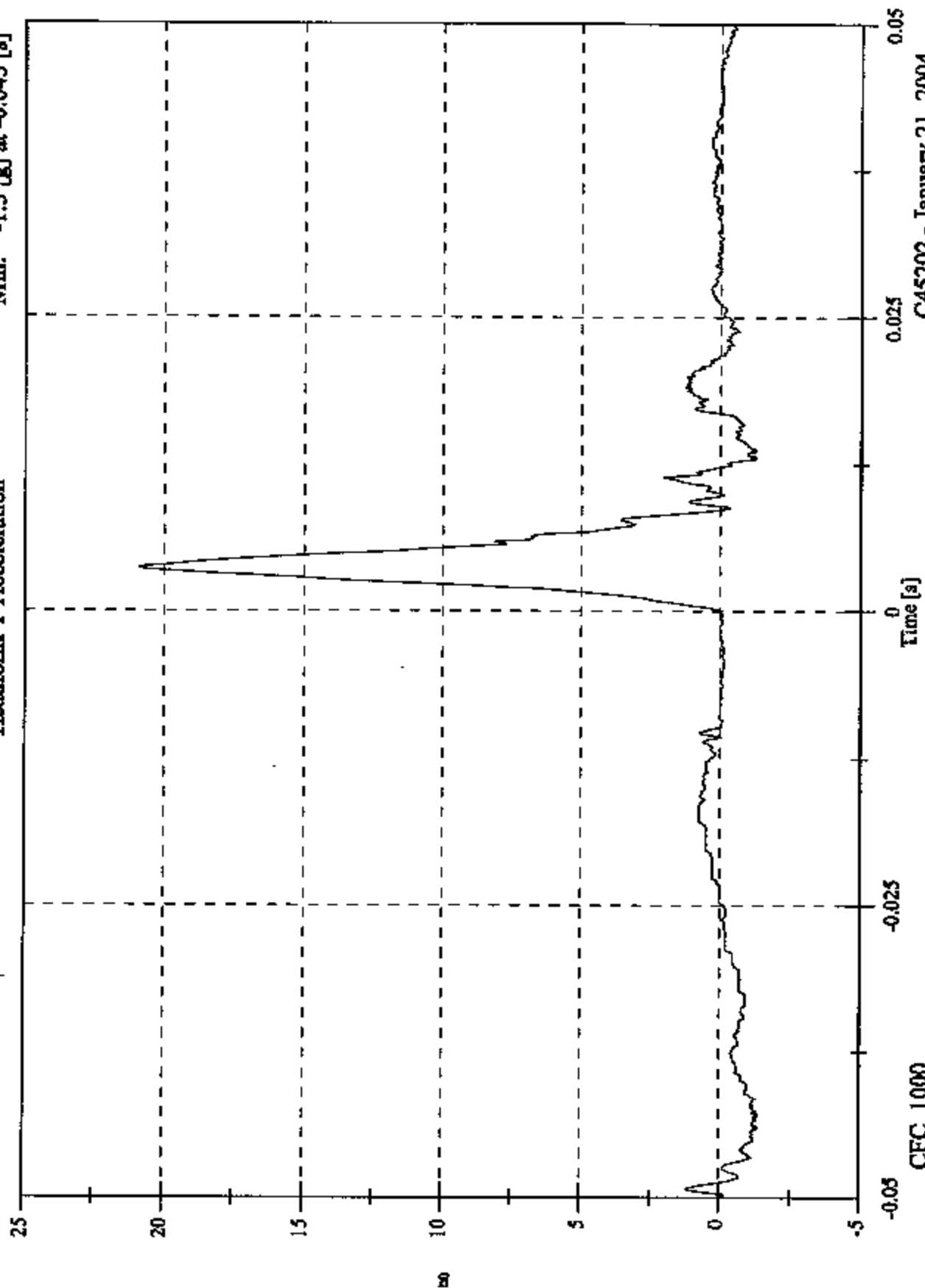


C45202 - January 21, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Headform Y Acceleration

Max: 20.9 [g] at 0.004 [s]
Min: -1.3 [g] at -0.043 [s]



CFC_1000

-0.025

Time [s]

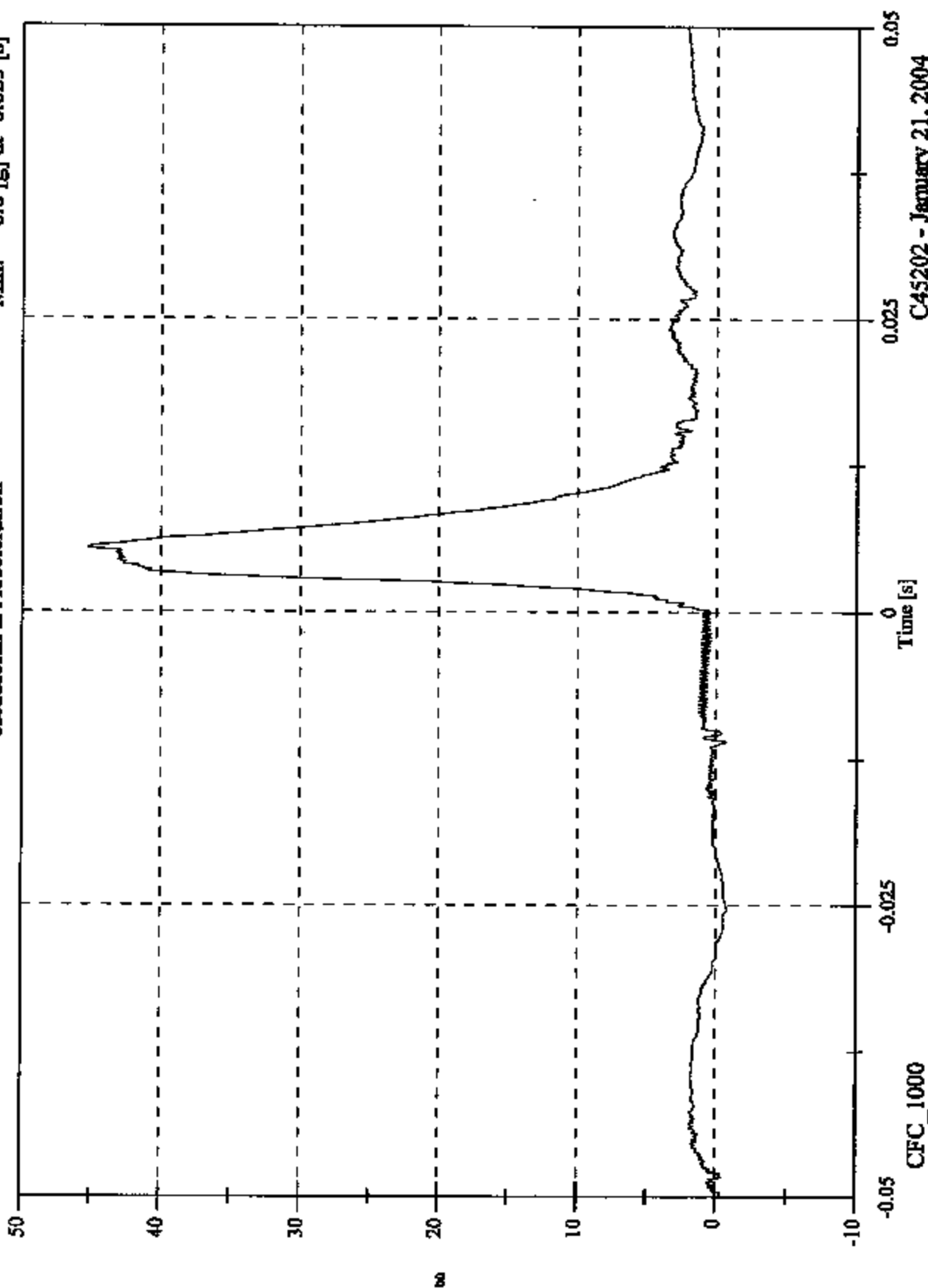
0.025

C45202 - January 21, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 45.2 [g] at 0.005 [s]
Min: -0.8 [g] at -0.025 [s]

Headform Z Acceleration



CFC_1000

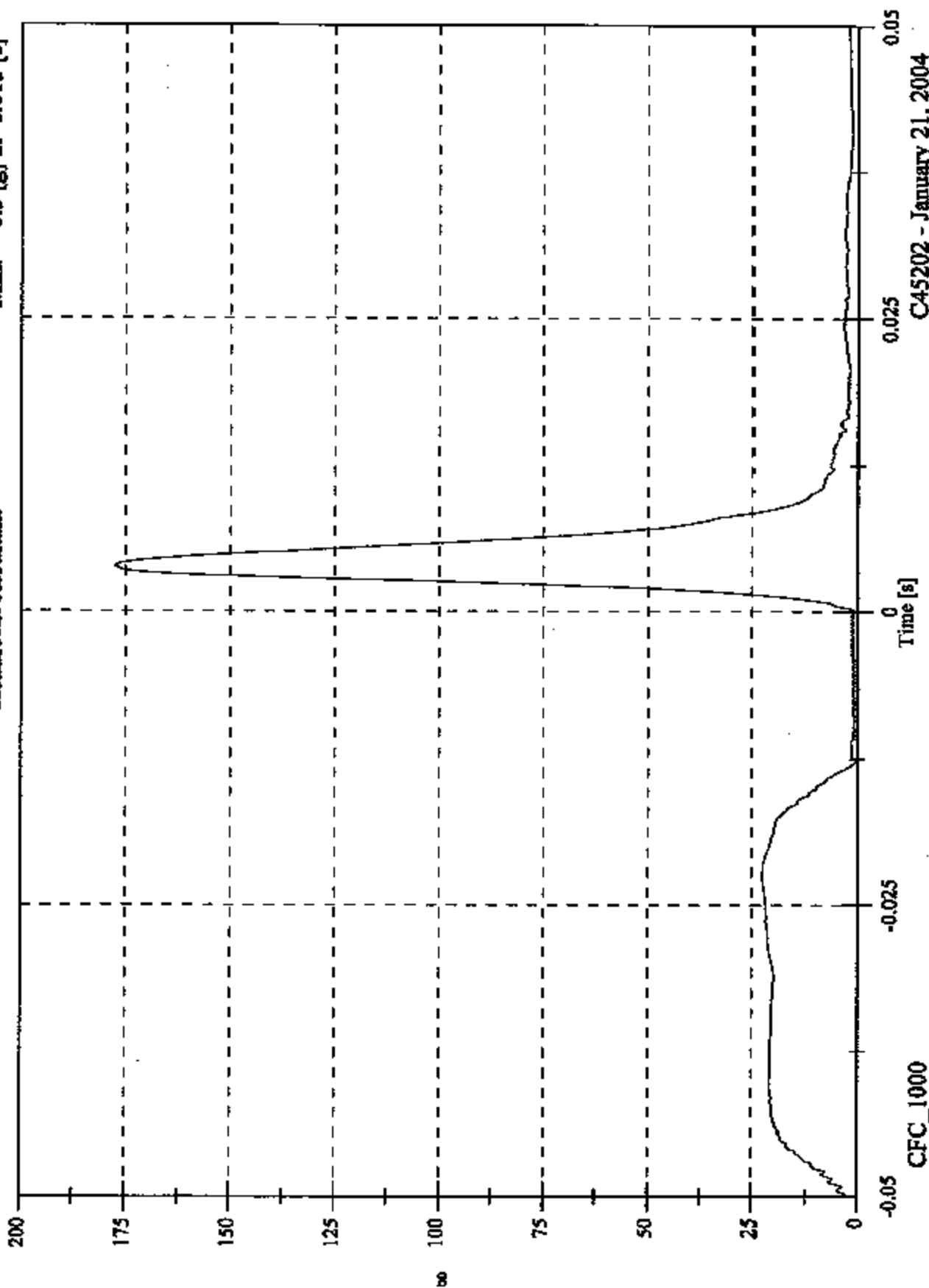
Time [s]

C45202 - January 21, 2004

FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 177.6 [g] at 0.004 [s]
Min: 0.5 [g] at -0.013 [s]

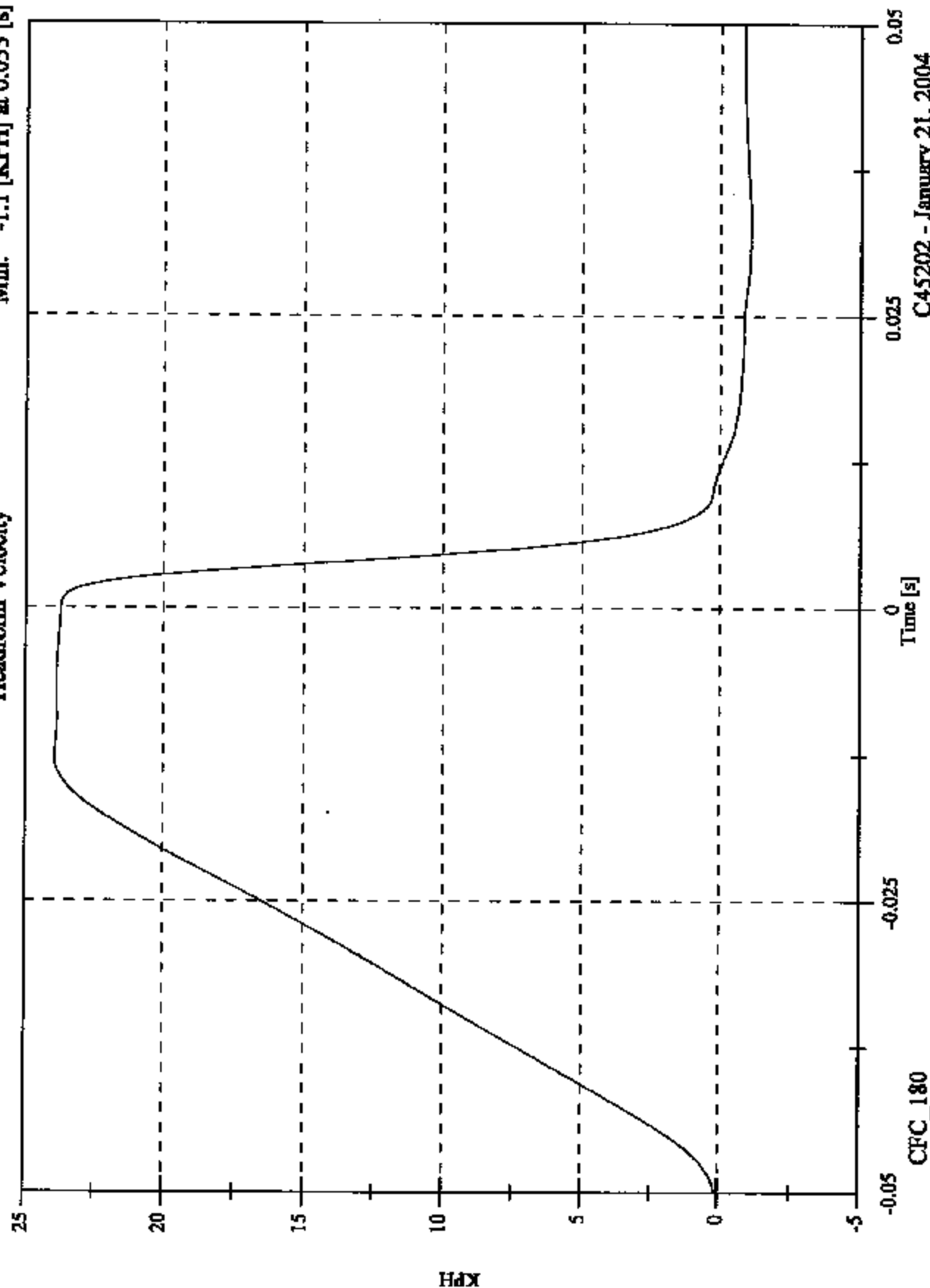
Headform Resultant



FMVSS 201U IMPACT TEST - 2004 Nissan Quest

Max: 24.0 [KPH] at -0.013 [s]
 Min: -1.1 [KPH] at 0.033 [s]

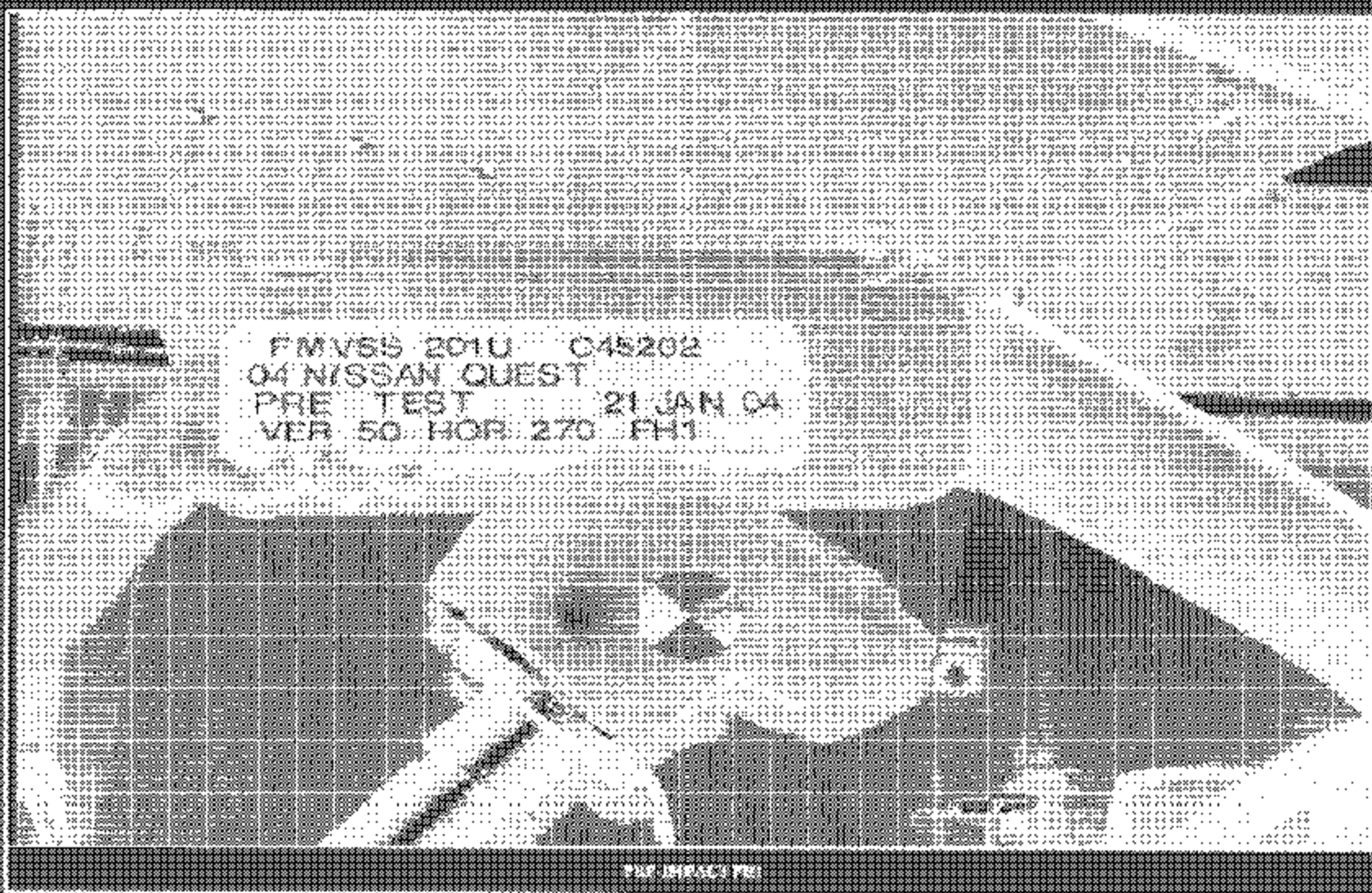
Headform Velocity



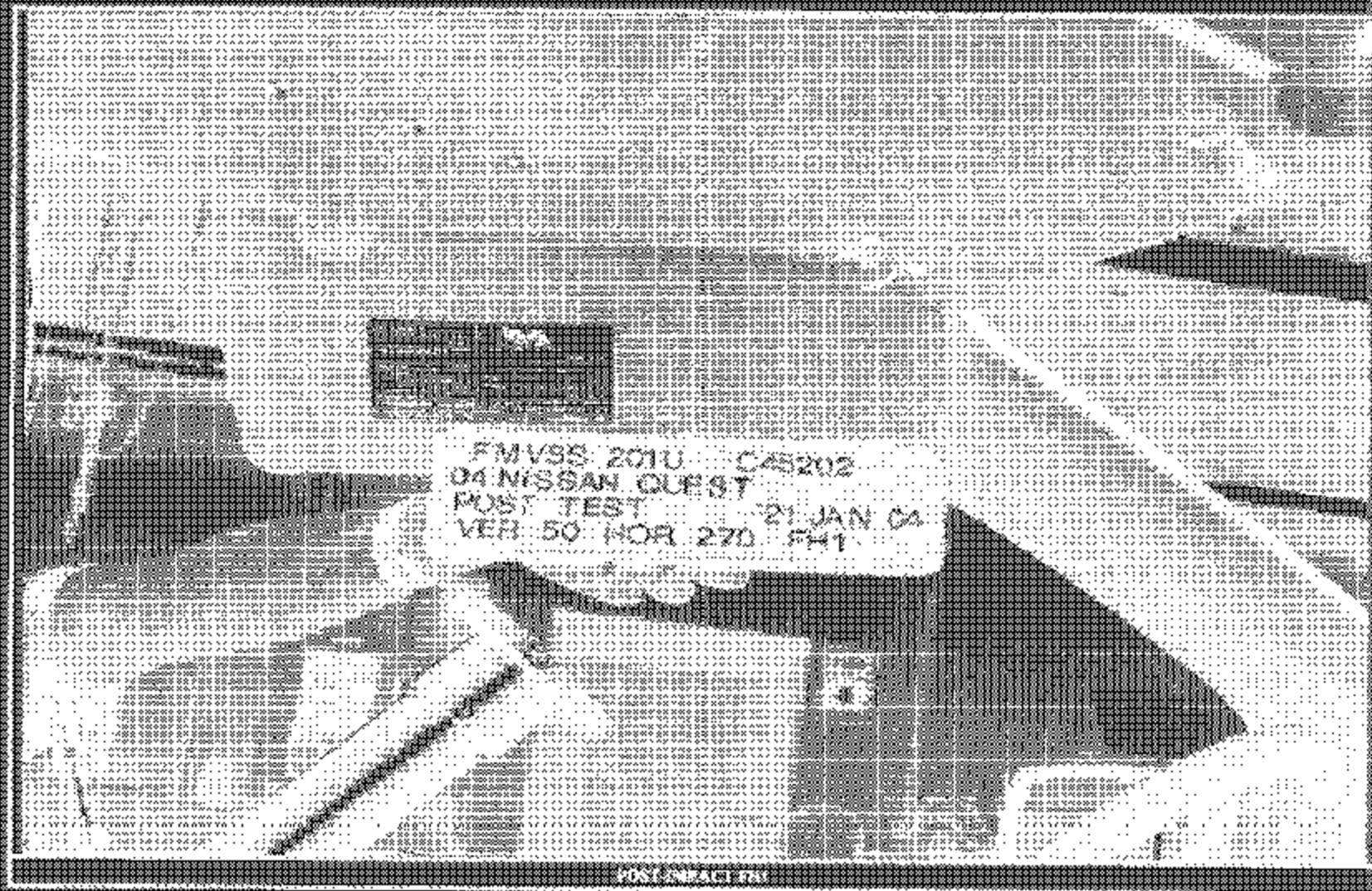
CFC_180

Time [s]

C45202 - January 21, 2004



FMVSS 201U C45202
04 NISSAN QUEST
PRE TEST 21 JAN 04
VER 50 HOR 270 FH1



POST ANGLE 75L

NTD-04

APPENDIX A
PHOTOGRAPHS

PHOTOGRAPHS

FIGURE	VIEW
A-1	LEFT SIDE VIEW OF VEHICLE
A-2	RIGHT SIDE VIEW OF VEHICLE
A-3	3/4 FRONTAL VIEW FROM LEFT SIDE OF VEHICLE
A-4	3/4 REAR VIEW FROM RIGHT SIDE OF VEHICLE
A-5	VEHICLE'S CERTIFICATION LABEL
A-6	VEHICLE'S TIRE INFORMATION LABEL
A-7	PRE-TEST DRIVER SIDE A-PILLAR
A-8	PRE-TEST DRIVER SIDE FRONT HEADER
A-9	PRE-TEST DRIVER SIDE SIDE RAIL
A-10	PRE-TEST DRIVER SIDE B-PILLAR
A-11	PRE-TEST DRIVER SLIDING DOOR
A-12	PRE-TEST DRIVER OTHER PILLAR
A-13	PRE-TEST DRIVER SIDE REAR PILLAR
A-14	PRE-TEST PASSENGER SIDE A-PILLAR
A-15	PRE-TEST PASSENGER SIDE FRONT HEADER
A-16	PRE-TEST PASSENGER SIDE SIDE RAIL
A-17	PRE-TEST PASSENGER SIDE B-PILLAR
A-18	PRE-TEST PASSENGER SIDE SLIDING DOOR
A-19	PRE-TEST PASSENGER SIDE OTHER PILLAR
A-20	PRE-TEST PASSENGER SIDE REAR PILLAR
A-21	POST-TEST DRIVER SIDE A-PILLAR
A-22	POST-TEST DRIVER FRONT HEADER
A-23	POST-TEST DRIVER SIDE SIDE RAIL
A-24	POST-TEST DRIVER SIDE B-PILLAR
A-25	POST-TEST DRIVER SIDE SLIDING DOOR
A-26	POST-TEST DRIVER SIDE OTHER PILLAR
A-27	POST-TEST DRIVER SIDE REAR PILLAR
A-28	POST-TEST PASSENGER SIDE A-PILLAR
A-29	POST-TEST PASSENGER FRONT HEADER
A-30	POST-TEST PASSENGER SIDE SIDE RAIL
A-31	POST-TEST PASSENGER SIDE B-PILLAR
A-32	POST-TEST PASSENGER SIDE SLIDING DOOR
A-33	POST-TEST PASSENGER SIDE OTHER PILLAR
A-34	POST-TEST PASSENGER SIDE REAR PILLAR



Figure A-1 LEFT SIDE VIEW OF VEHICLE

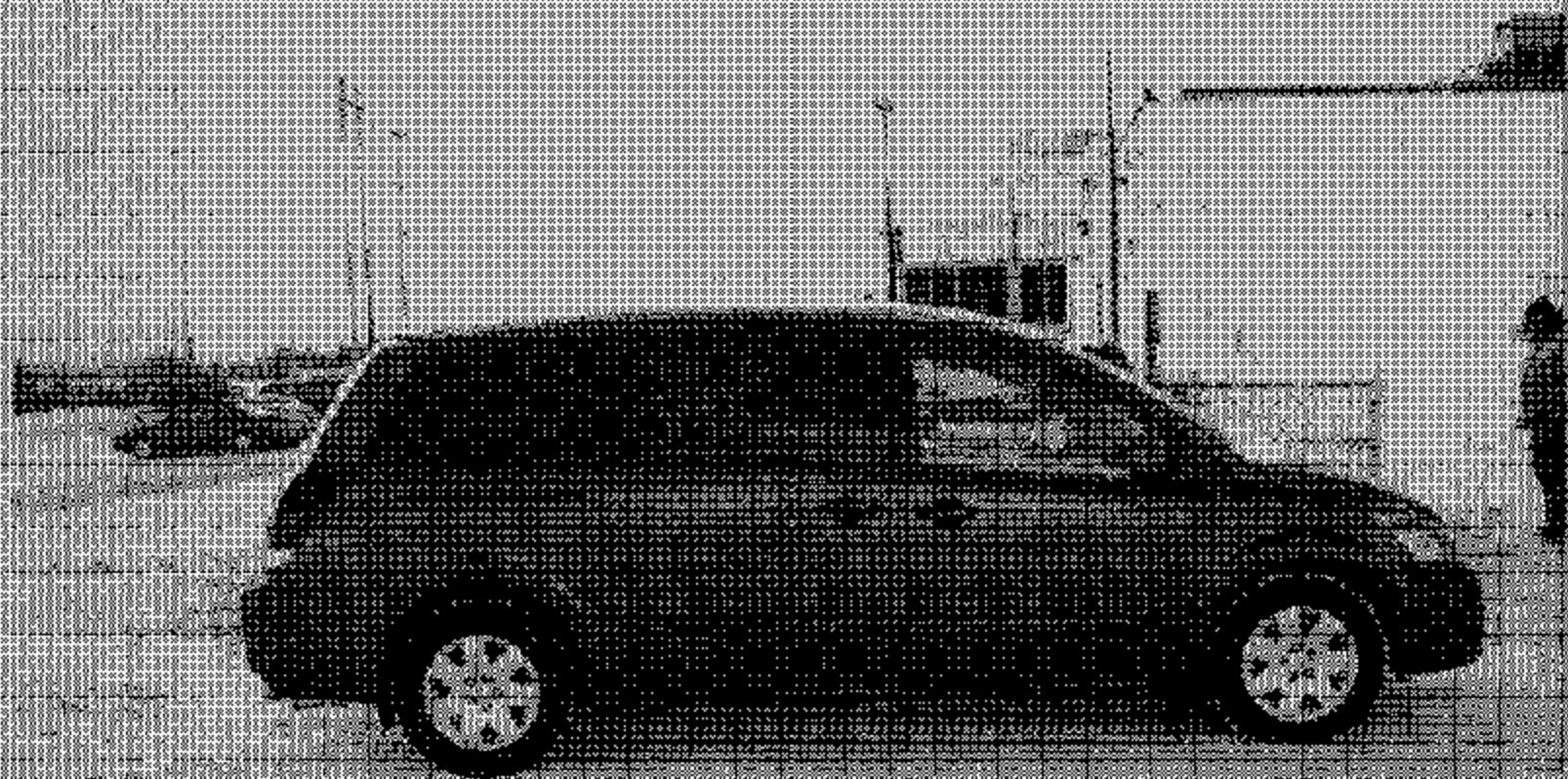


Figure A-2: RIGHT SIDE VIEW OF VEHICLE



Figure A-3 34 FRONTAL VIEW FROM LEFT SIDE OF VEHICLE

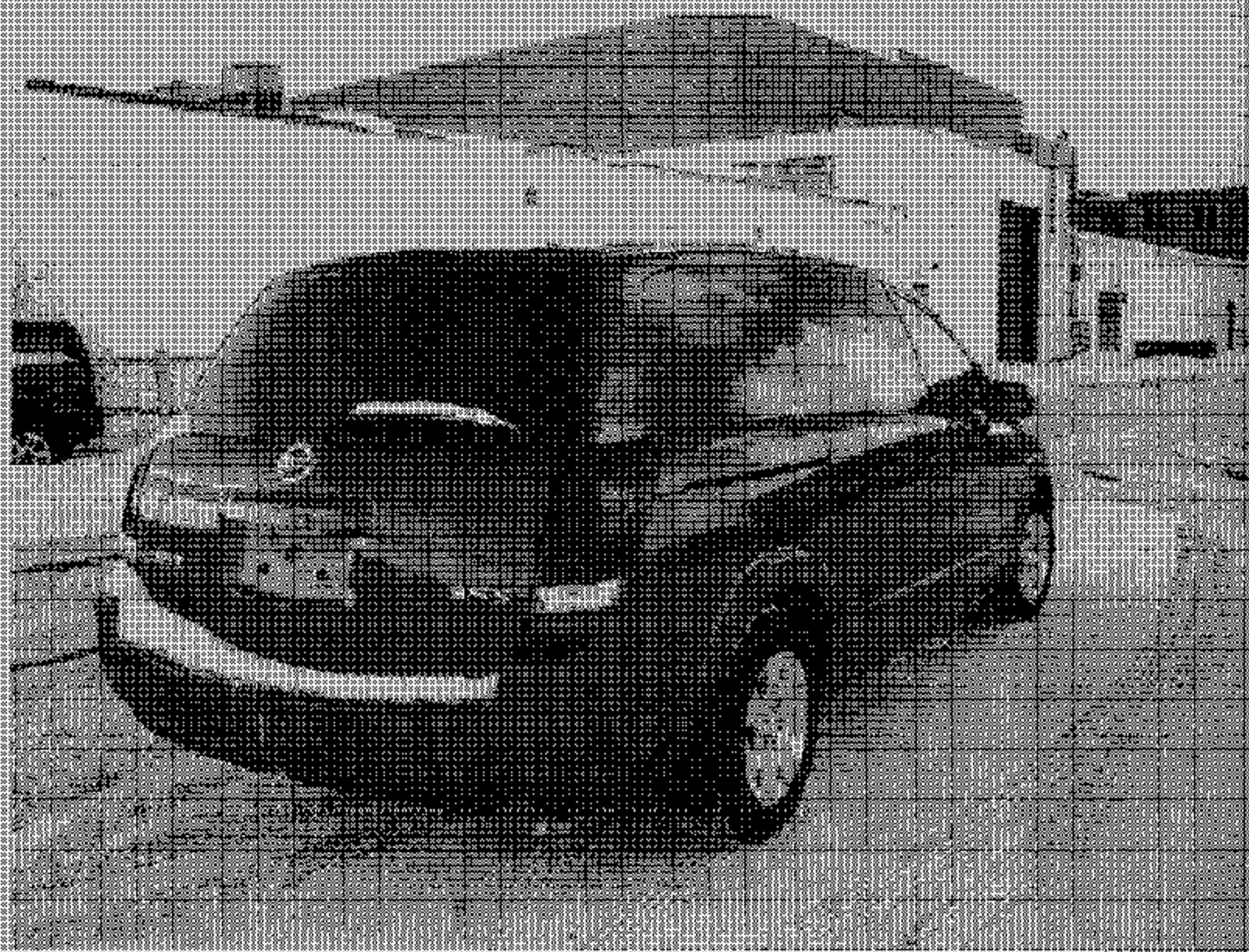


Figure A-4 34 REAR VIEW FROM RIGHT SIDE OF VEHICLE

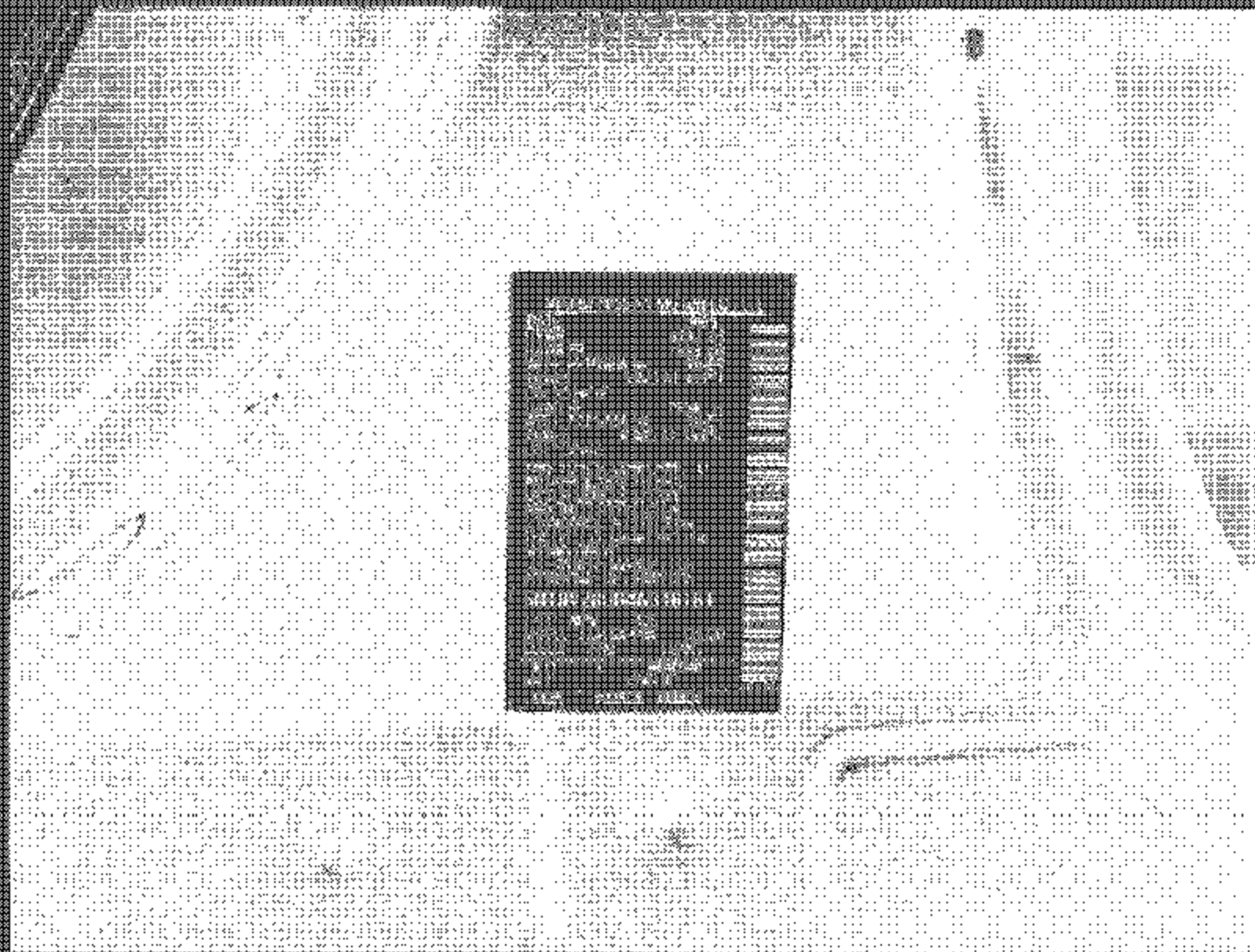


Figure A-5 VEHICLE CERTIFICATION LABEL



FIGURE 4-4. VEHICLE'S FIRE INFORMATION LABEL



Figure A-7. PRE-TEST DRIVER SIDE A-PILLAR

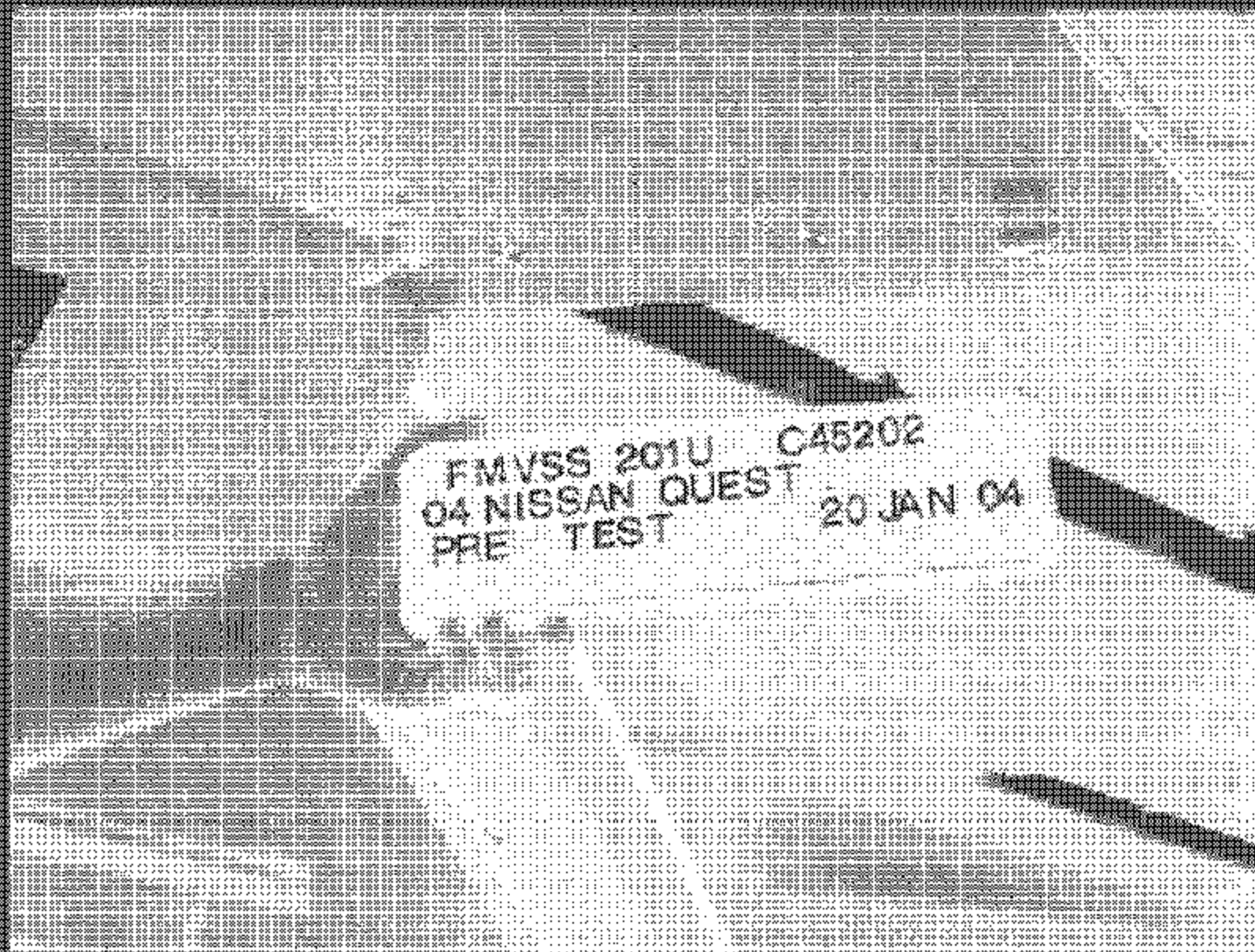


Figure A-3 PRE-TEST DRIVER SIDE FRONT BEADER

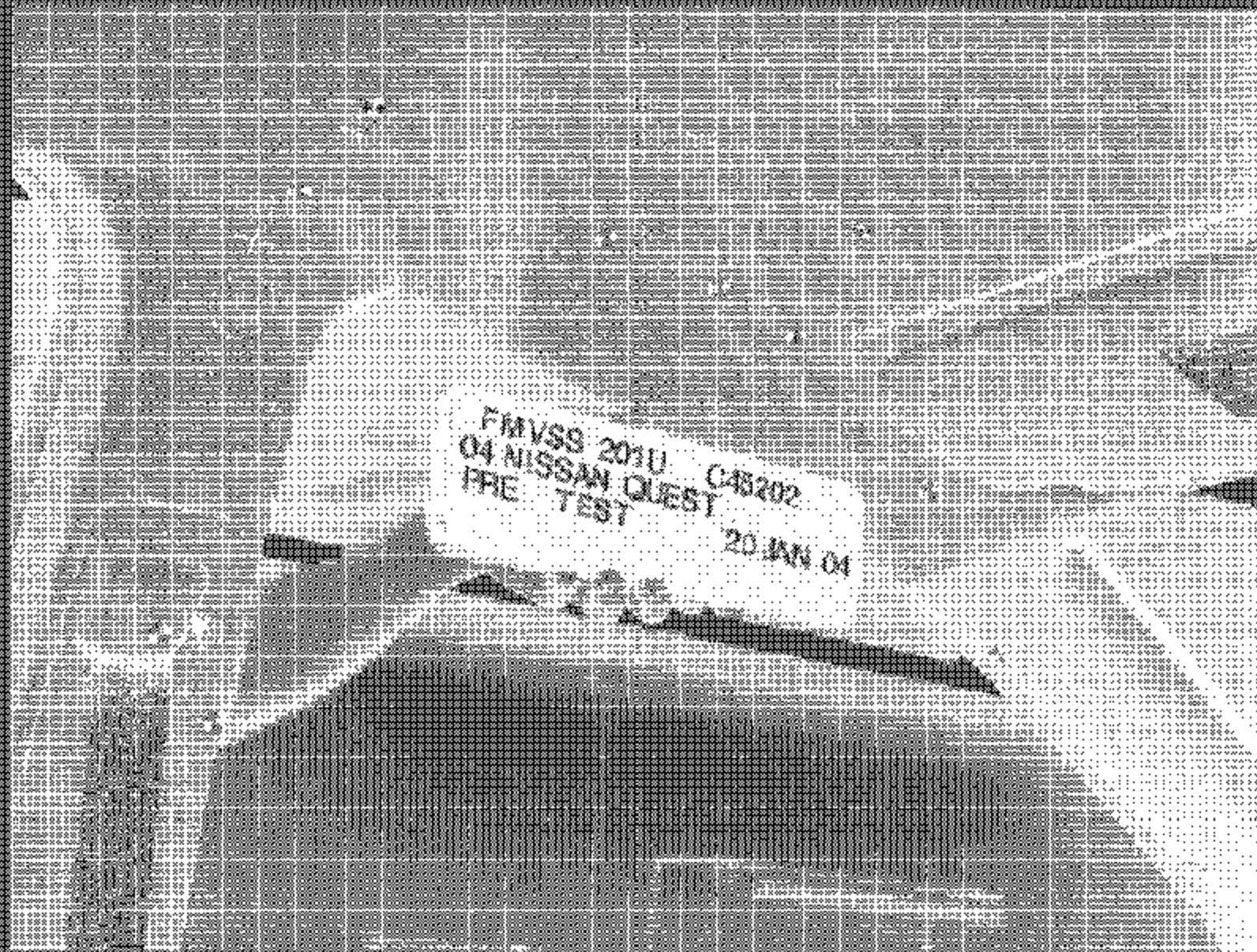


Figure A-9 PRE-TEST DRIVER SIDE SIDE RAIL



Figure A-10 - PRE TEST DRIVER SIDE B-PILLAR

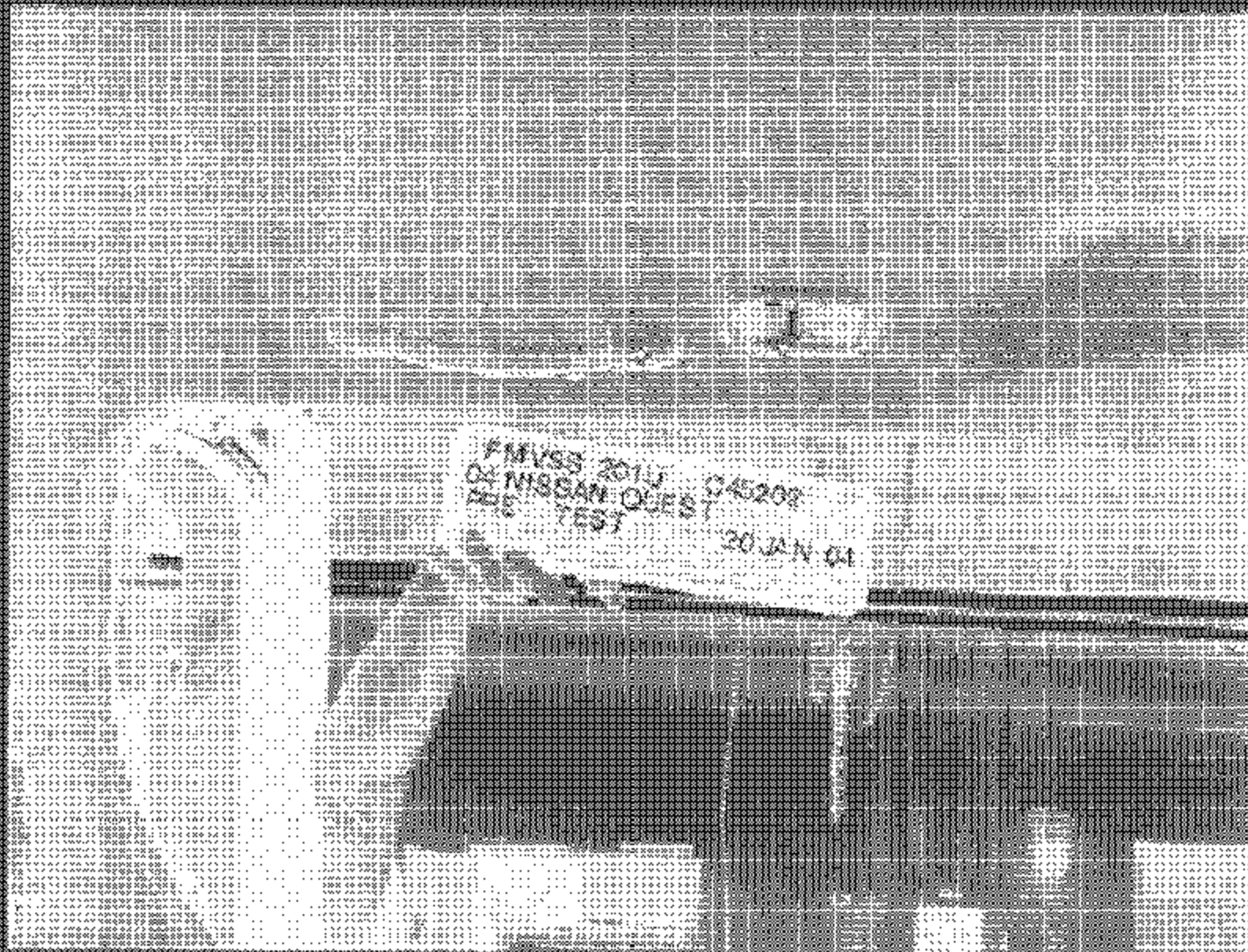


Figure A-1) PRE TEST DRIVER SIDE SLIDING DOOR



Figure A-12. PRE-TEST DRIVER-SIDE OTHER PILLER



Figure A-12 PRE-TEST DRIVER SIDE REAR PCLAR



Figure A-14 PRE-TEST PASSENGER SIDE A-PILLAR

FMVSS 201U
04 NISSAN QUEST C45202
PRE TEST
20 JAN 04

Figure A-13 PRE-TEST PASSENGER SIDE FRONT HEADER



Figure A-15 PRE-TEST PASSENGER SIDE SIDE RAIL

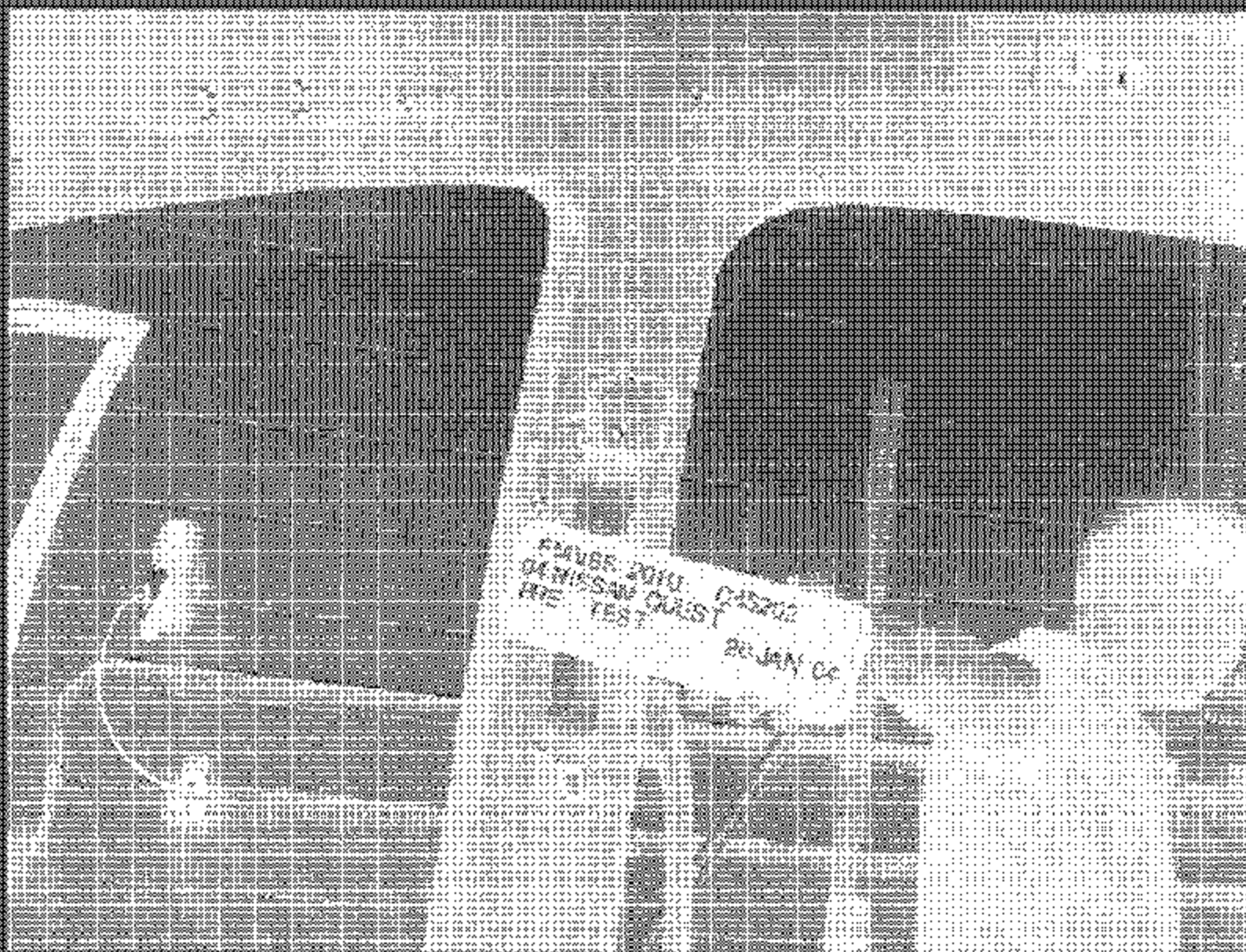


Figure A-17 PRE-TEST PASSENGER SIDE B-PILLAR

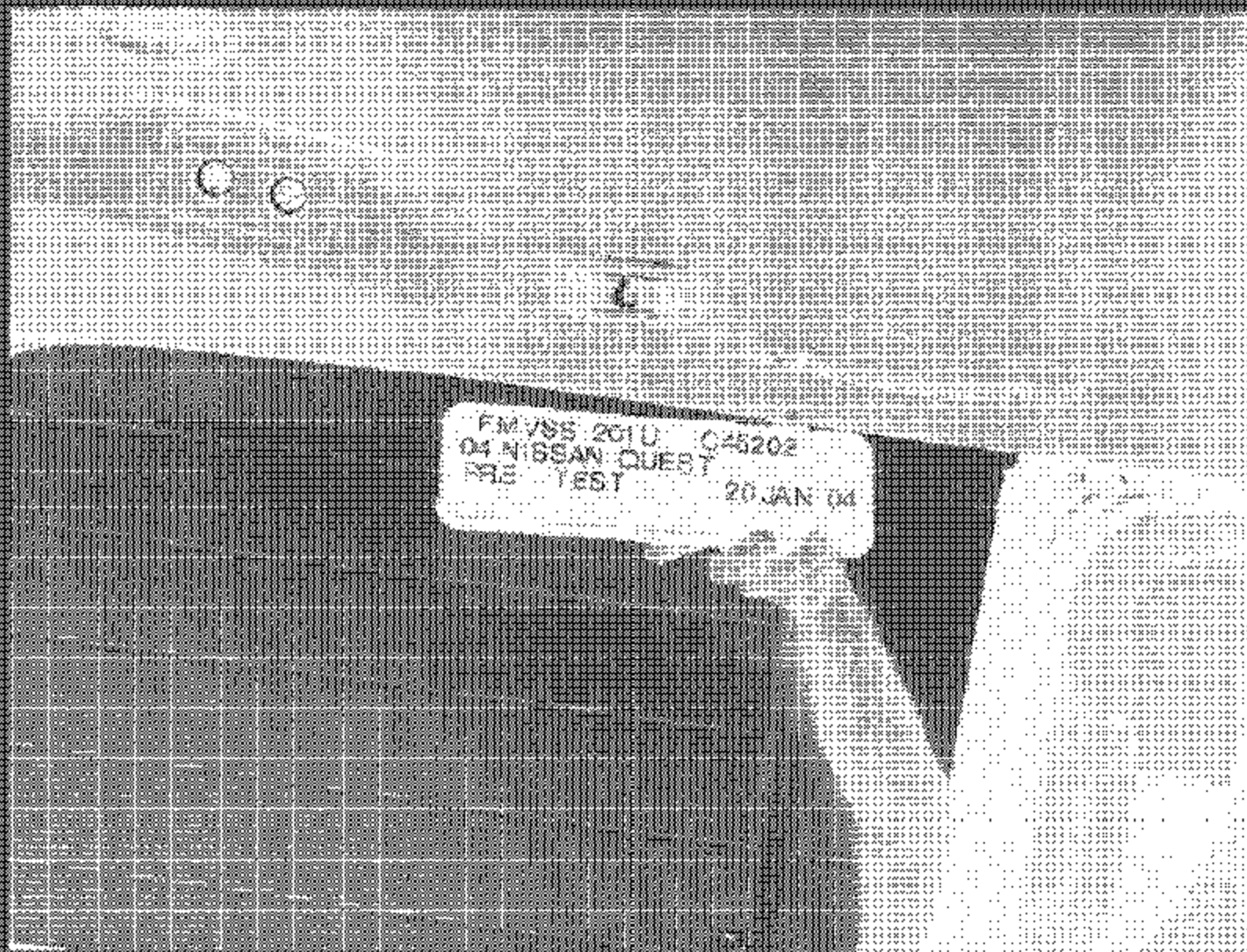


Figure A-12 PRE-TEST PASSENGER SIDE SLIDING DOOR



Figure A-14 PRE-TEST PASSPORT SIDE OTHER FILLAR

FARVSS 2010 C45292
04 NISSAN QUEST
PRE TEST

20 JAN 04

PRE-TEST PASSENGER SIDE REAR PILAR

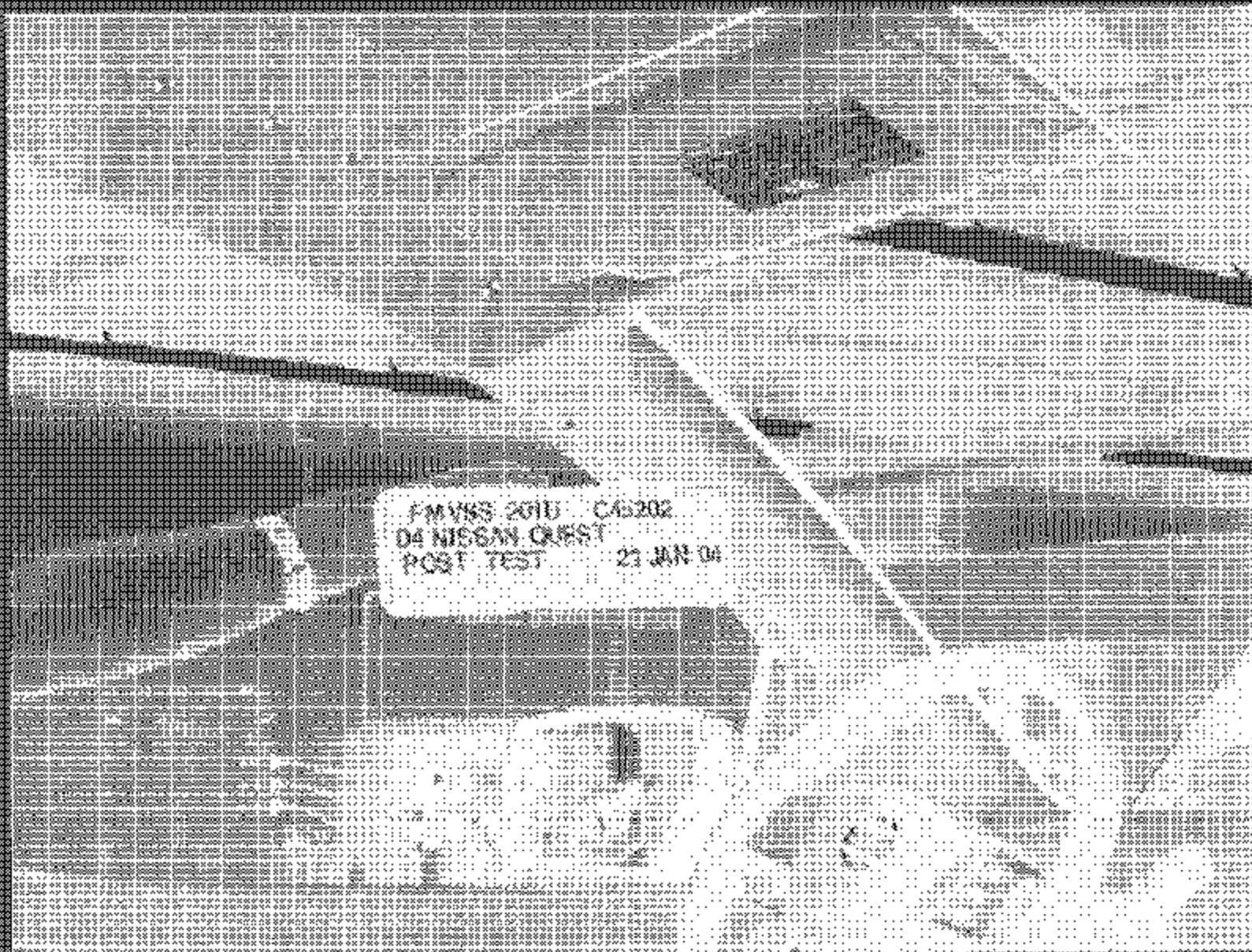


Figure A-21: POST TEST DRIVER SIDE A-PILLAR

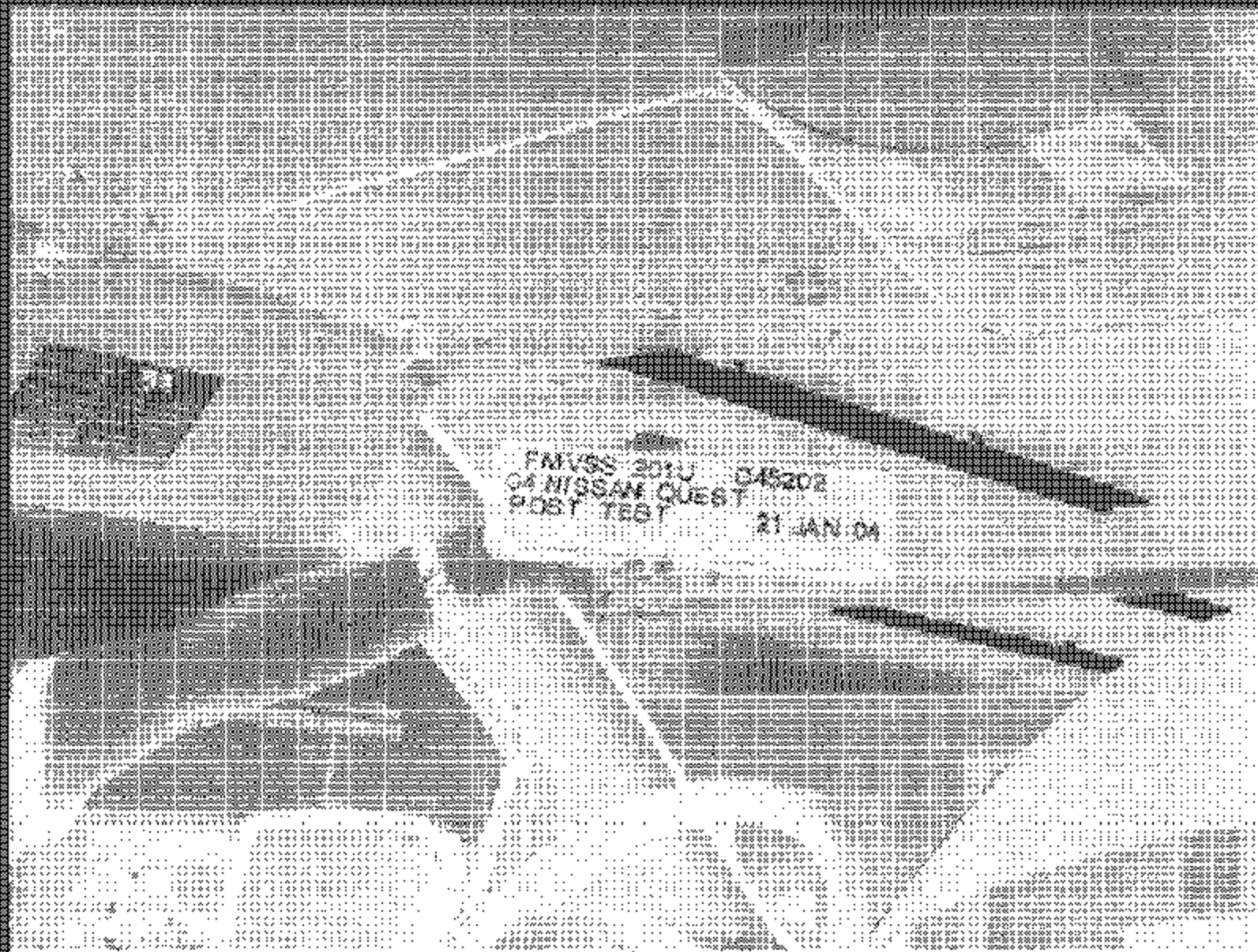


Figure A-22: POST-TEST DRIVER SIDE FRONT HEADLAMP



Figure A-21: POST-TEST DRIVEK SIDE SIDE RAIL

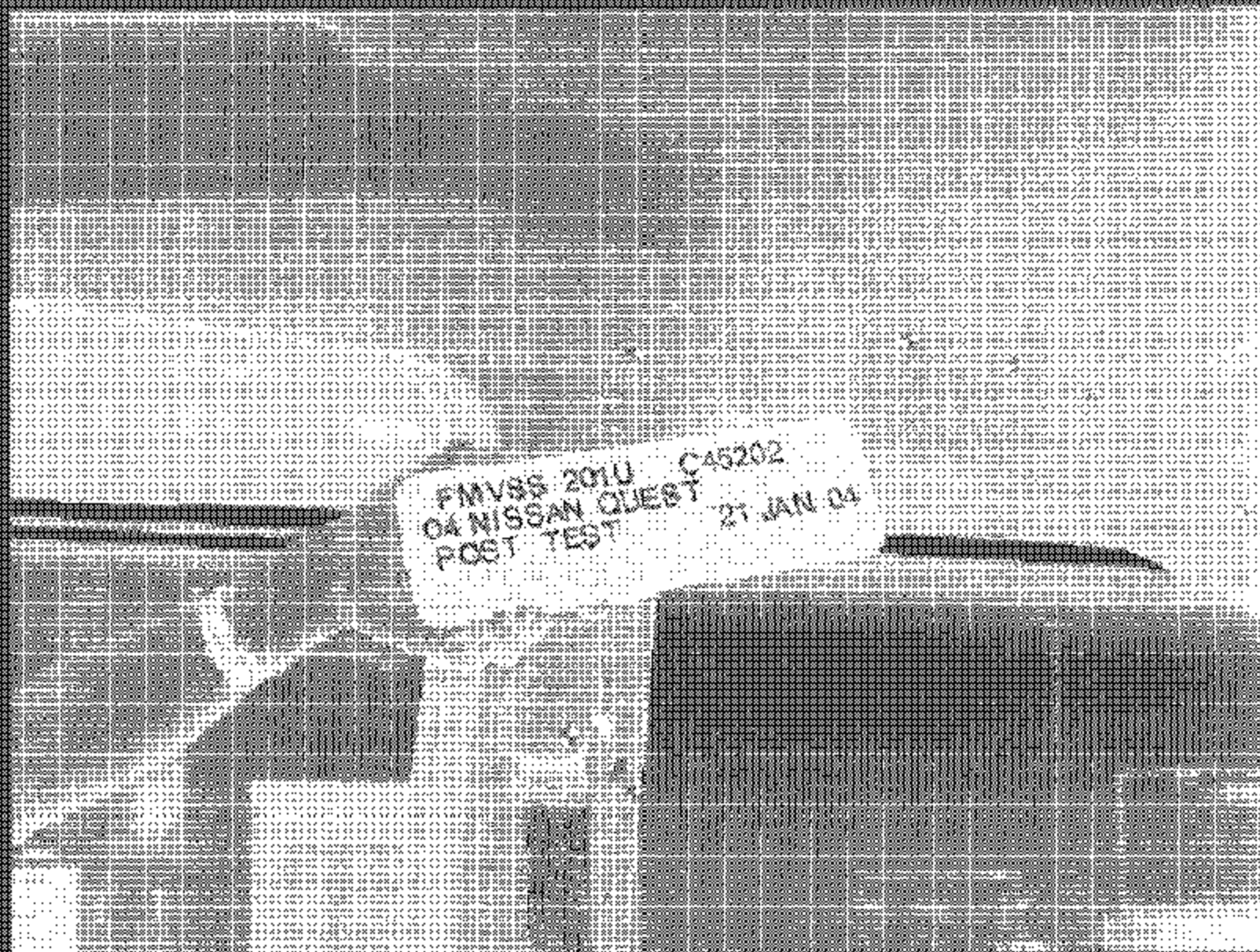


Figure A-24 POST-TEST DRIVER SIDE B-PILLAR

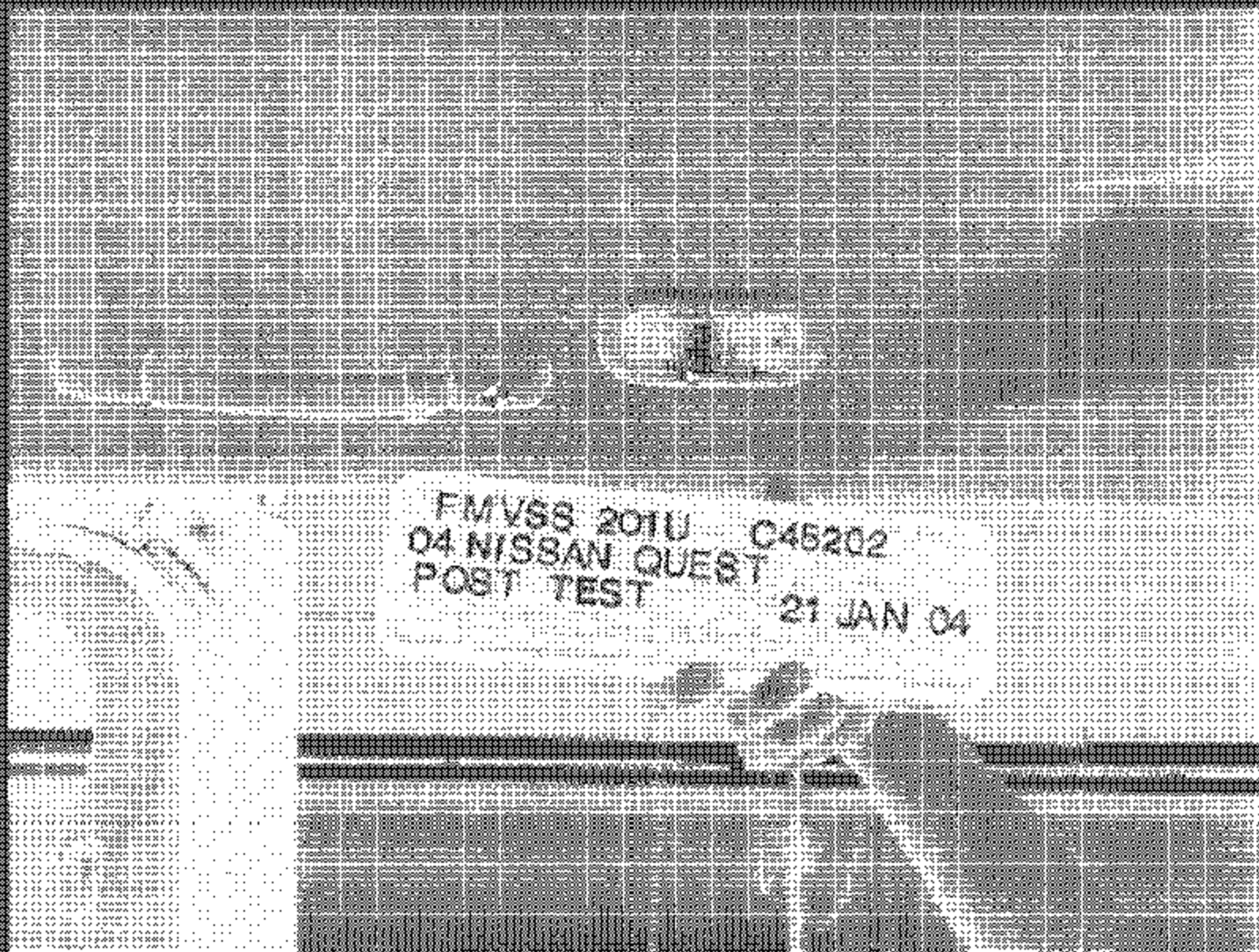


Figure A-25: POST TEST DRIVER SIDE SLIDING DOOR

FM VSS 2010
04 NISSAN QUEST C45202
POST TEST
20 JAN 04

FIGURE 25. POST-TEST DRIVER SIDE OTHER PILLER

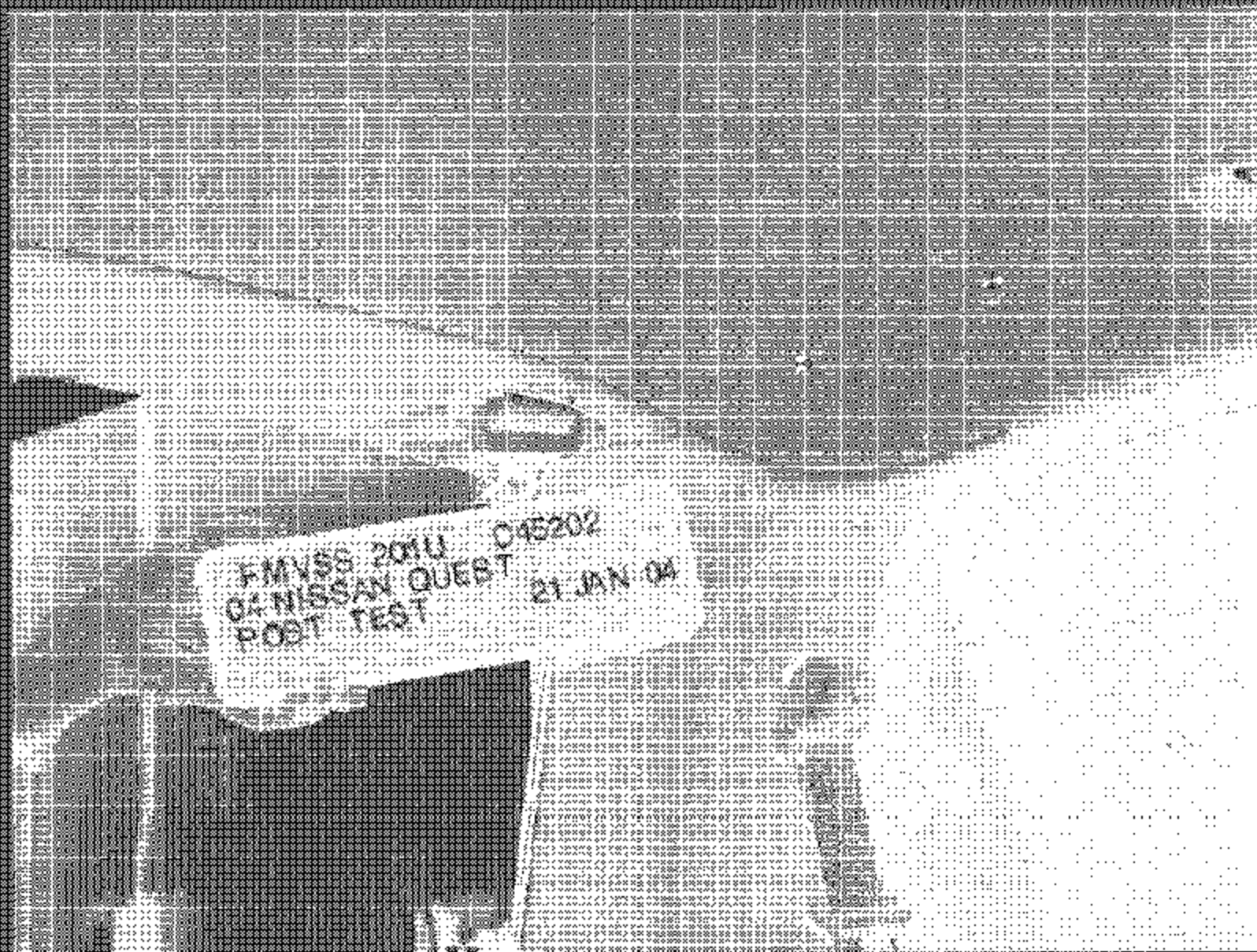


Figure A-27 POST TEST DRIVER SIDE REAR PILLAR



Figure 4-25 POST-IPS PASSENGER SIDE 4-MIL LAR

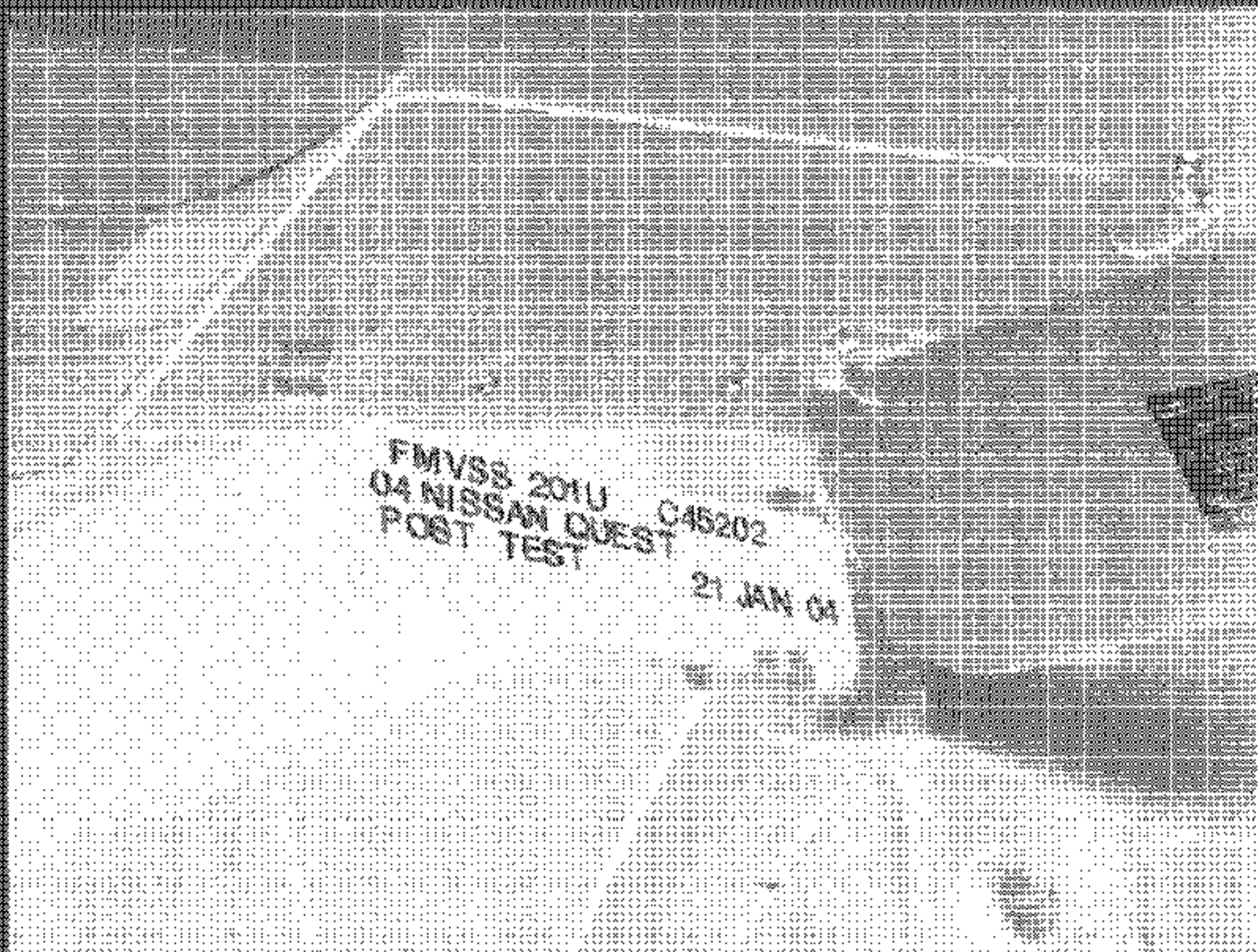


Figure A-29. POST-TEST PASSENGER SIDE FRONT HEADER

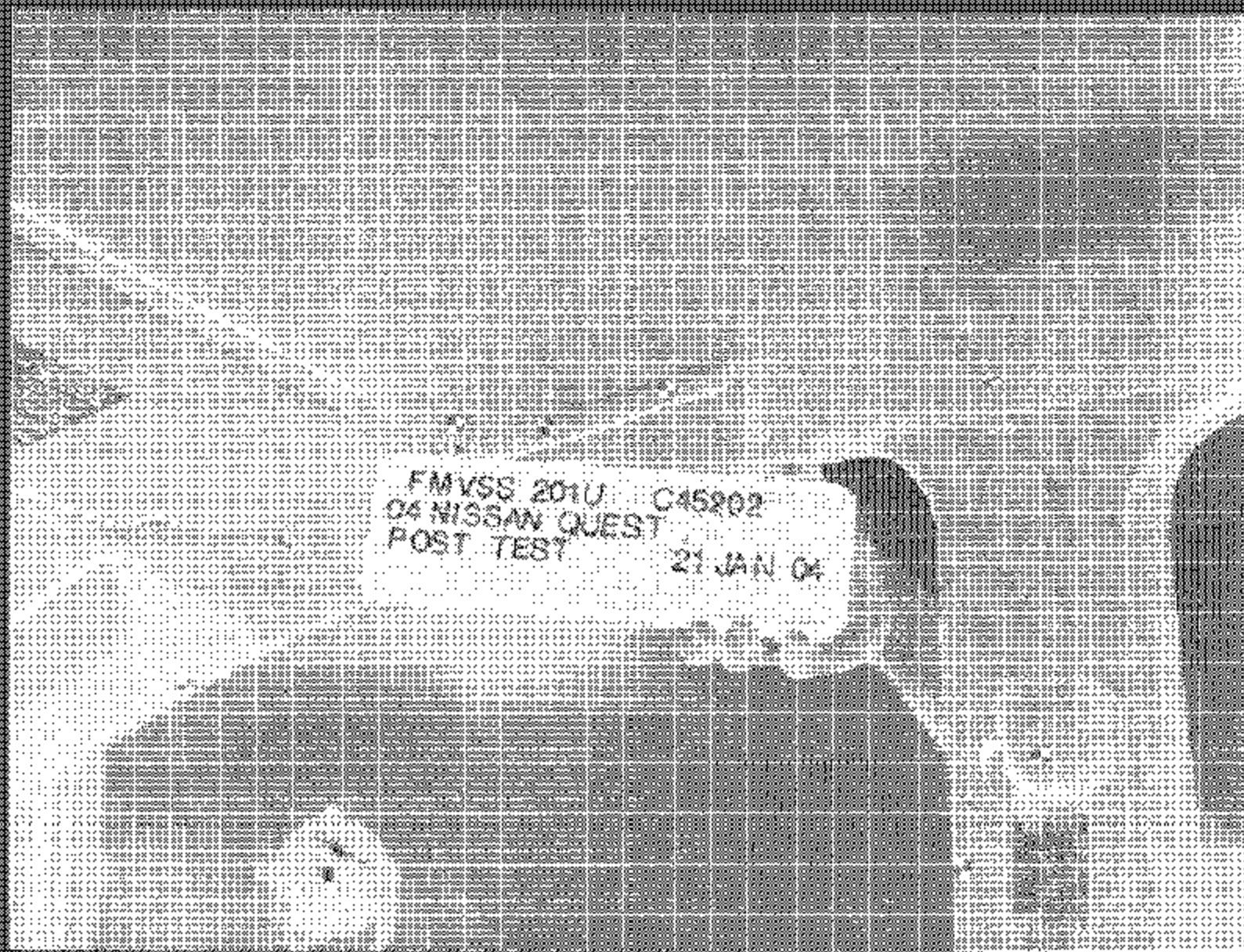


Figure A-30 POST-TEST PASSENGER SIDE SIDE RAIL

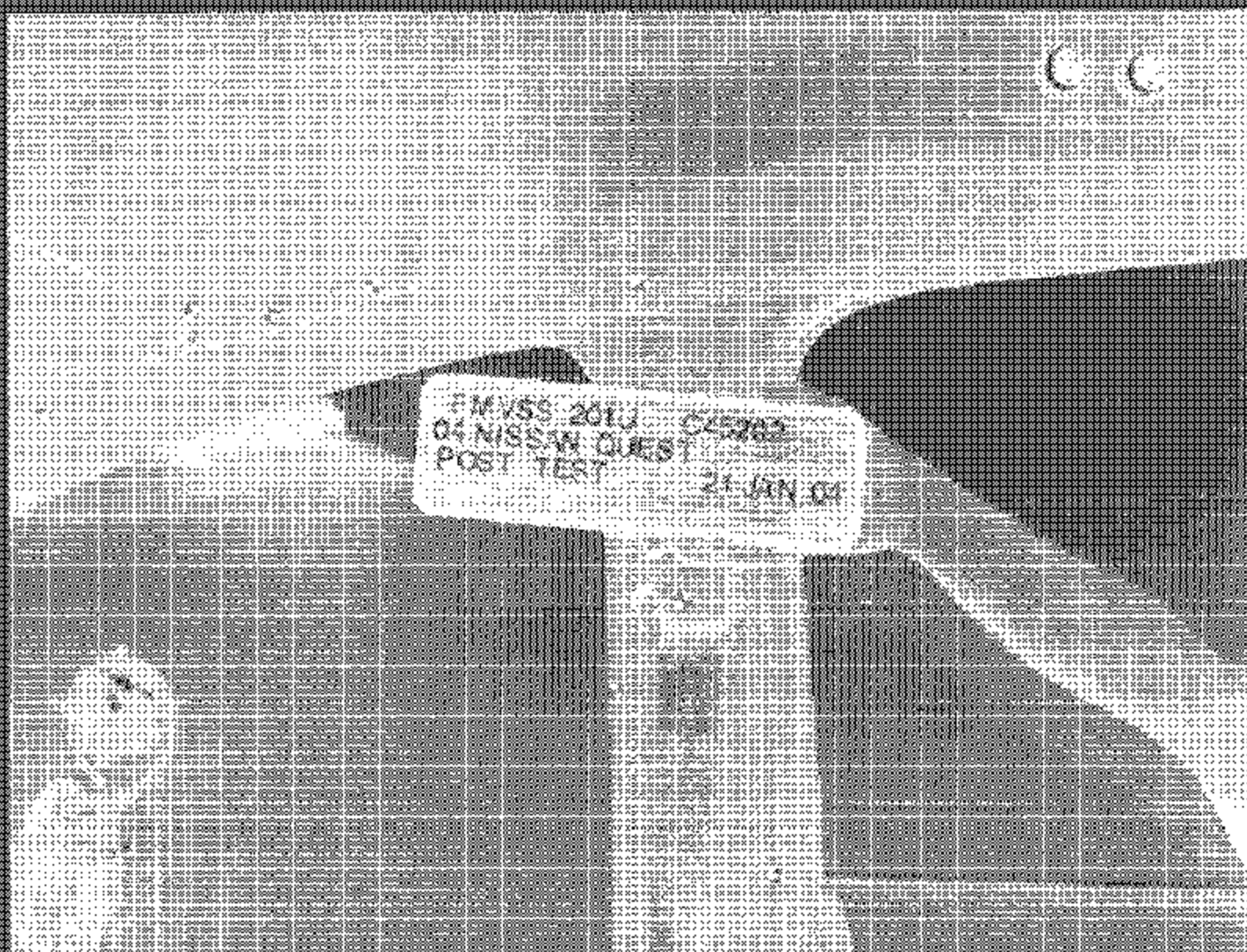


Figure A-31 POST TEST PASSENGER SIDE B-PILLAR

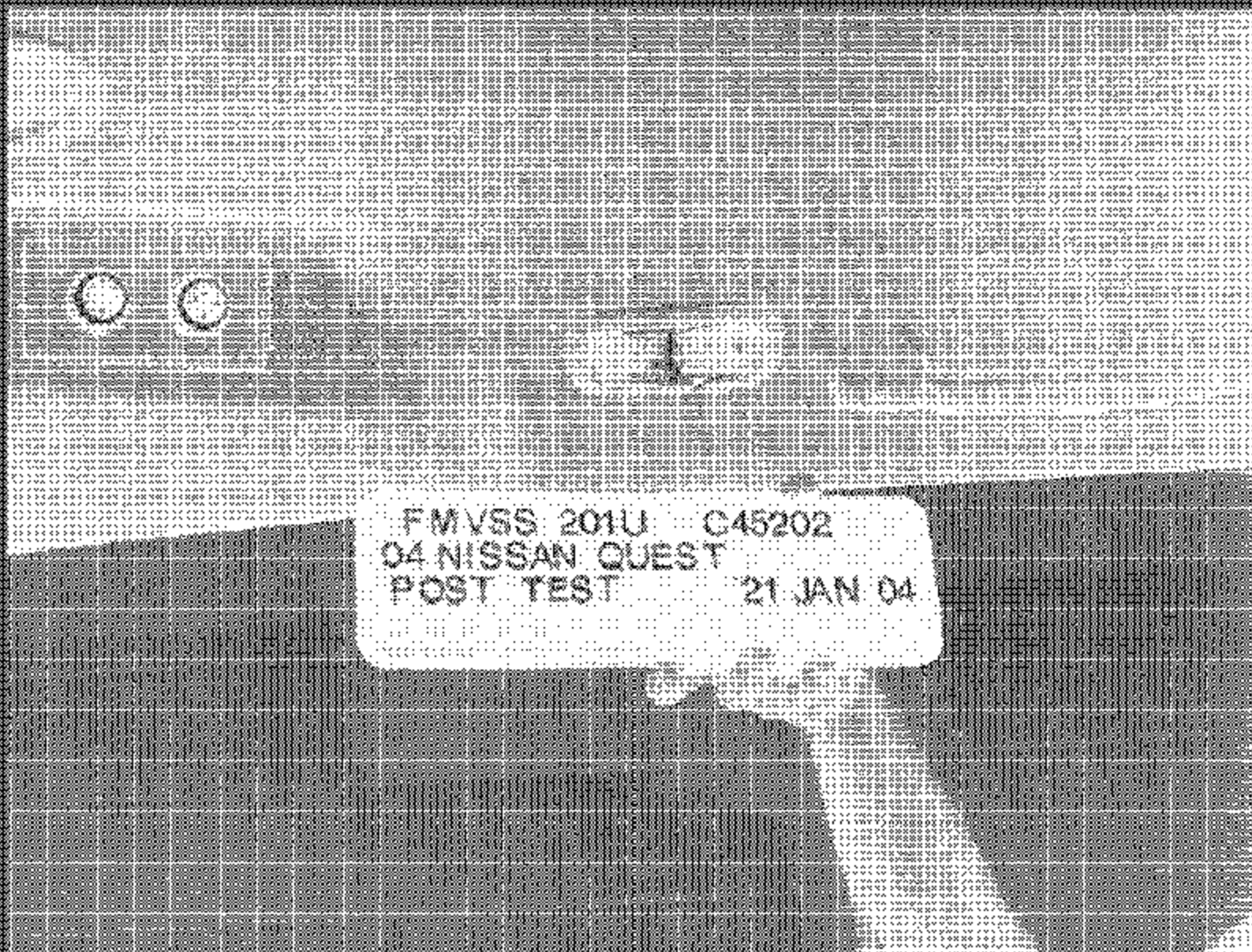


Figure A-32 POST-TEST PASSENGER SIDE SLIDING DOOR

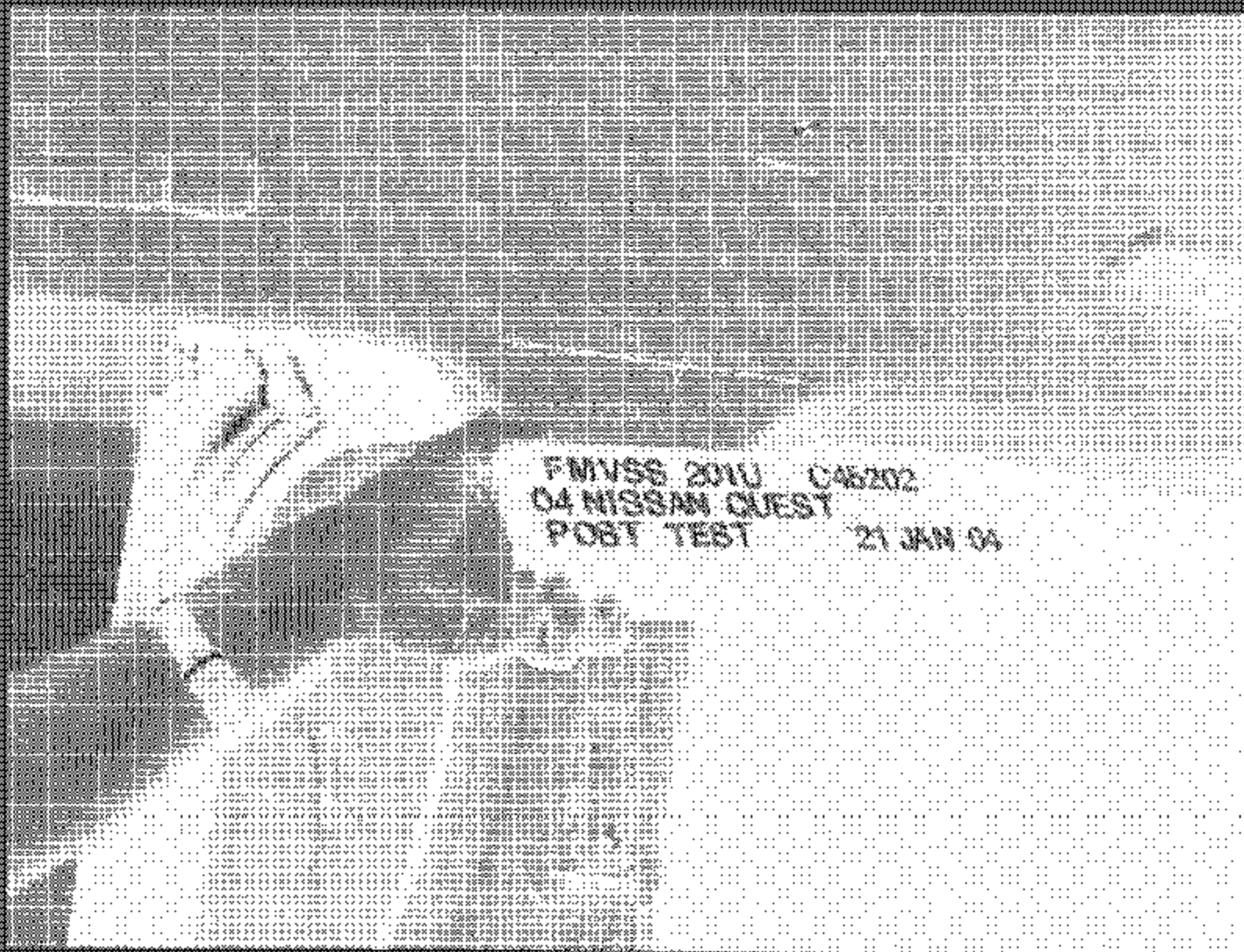


Figure A-33: POST-TEST PASSENGER SIDE OTHER PILLAR

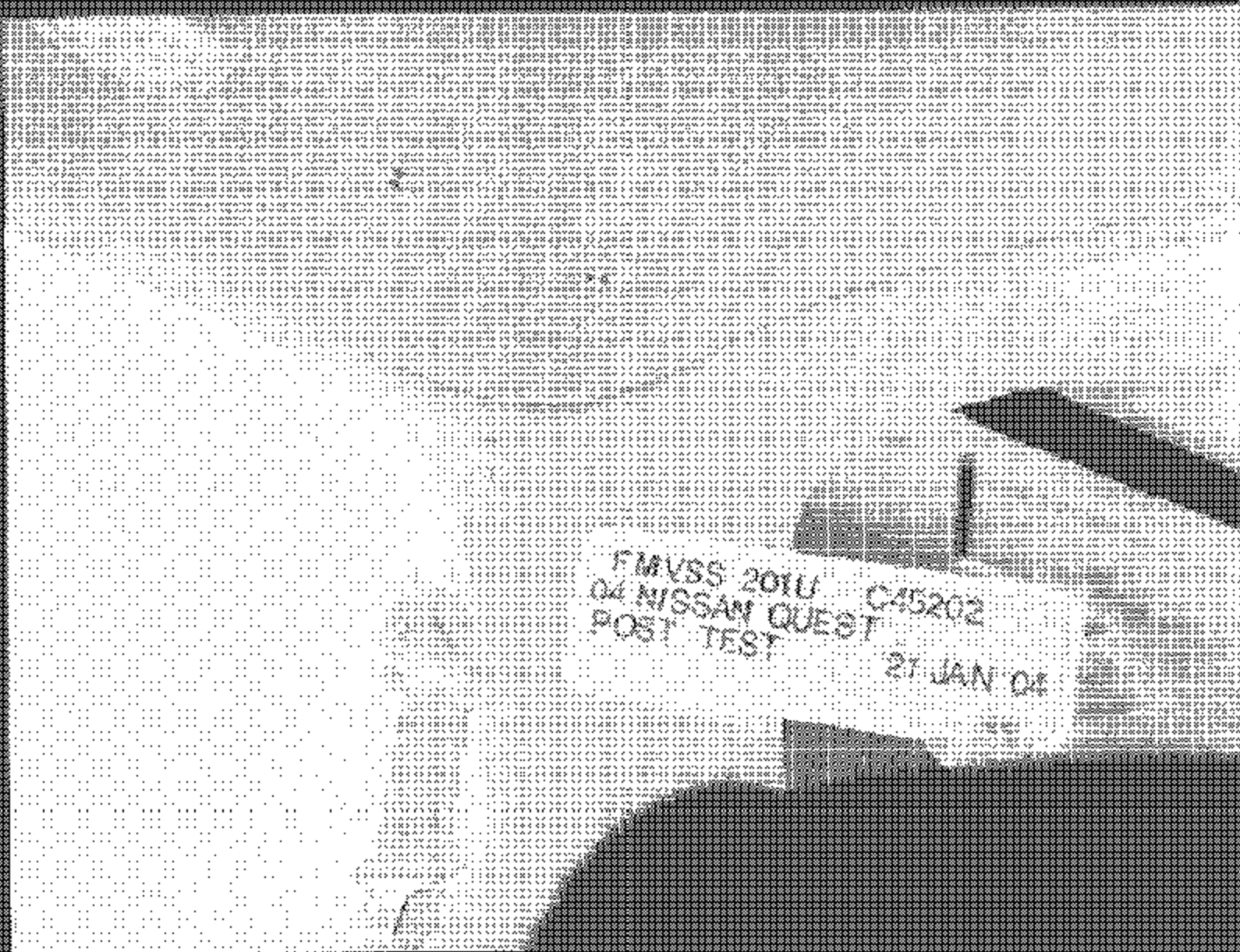


Figure A-34 POST TEST PASSENGER SIDE REAR PILLAR

APPENDIX B

PART 572L PERFORMANCE CALIBRATION IN SUPPORT OF VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT PROTECTION IN INTERIOR IMPACT

Appendix B contains the results from certification tests performed on the Free Motion Headforms utilized in this test program. The results indicate that the headforms meet all of the performance specifications given in 49 CFR Part 572 Subpart L.

The tests were conducted at the Dummy Certification Test Facility of Veridian Engineering. Summaries of the test results are included in this Appendix.

**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS
SERIAL NUMBER:		0642
CALIBRATION DATE:		January 13, 2004
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	24
RELATIVE HUMIDITY	10% to 70%	30
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	266.3
PEAK LATERAL ACCELERATION	15 Gs Maximum	5.6
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

ID. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J24876	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J33030	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J31909	08/22/03	02/23/04

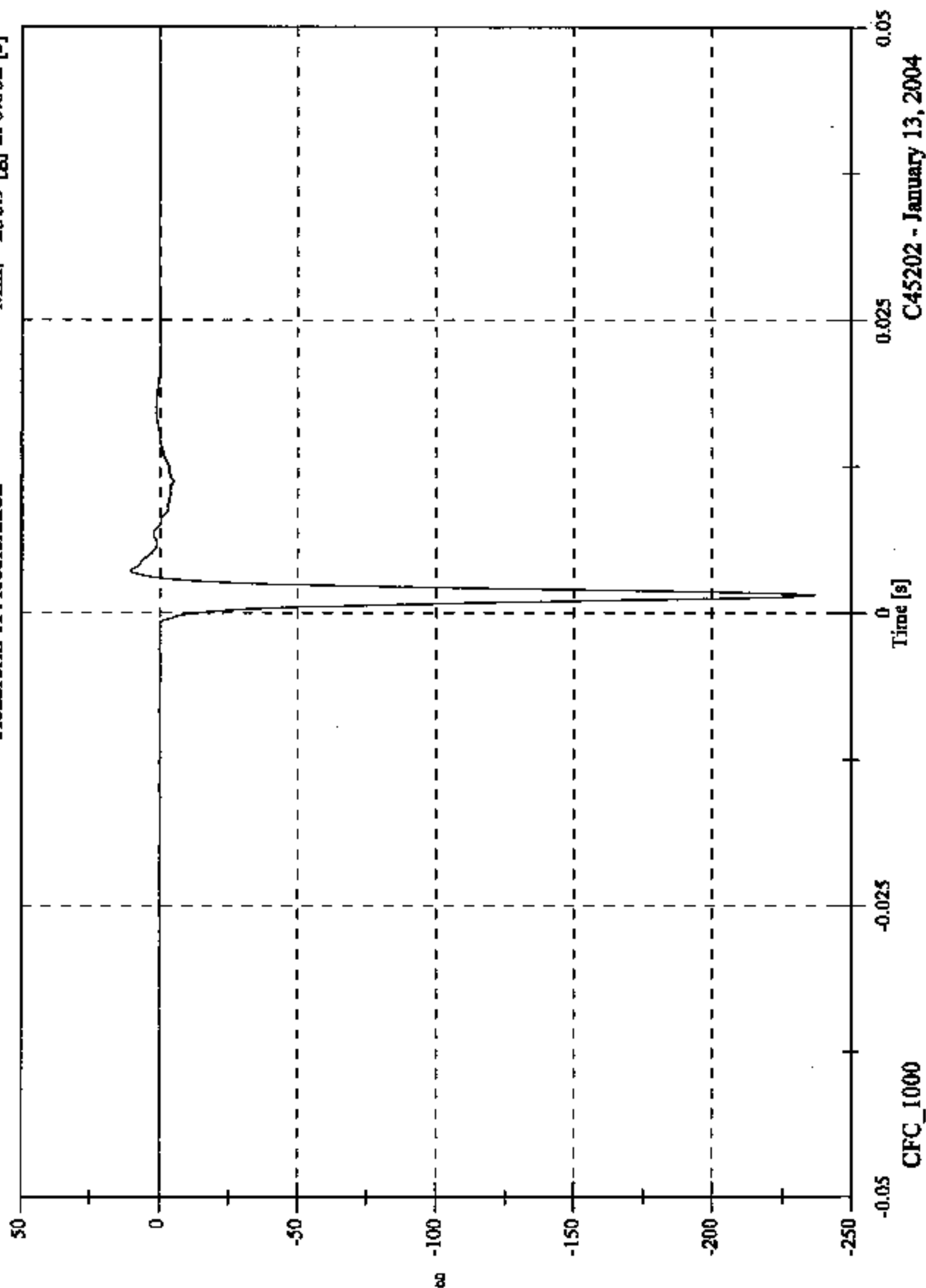
REMARKS:

FMVSS 201U - Headform Calibration Drops

Max: 10.2 [g] at 0.004 [s]

Min: -236.9 [g] at 0.002 [s]

Headform X Acceleration

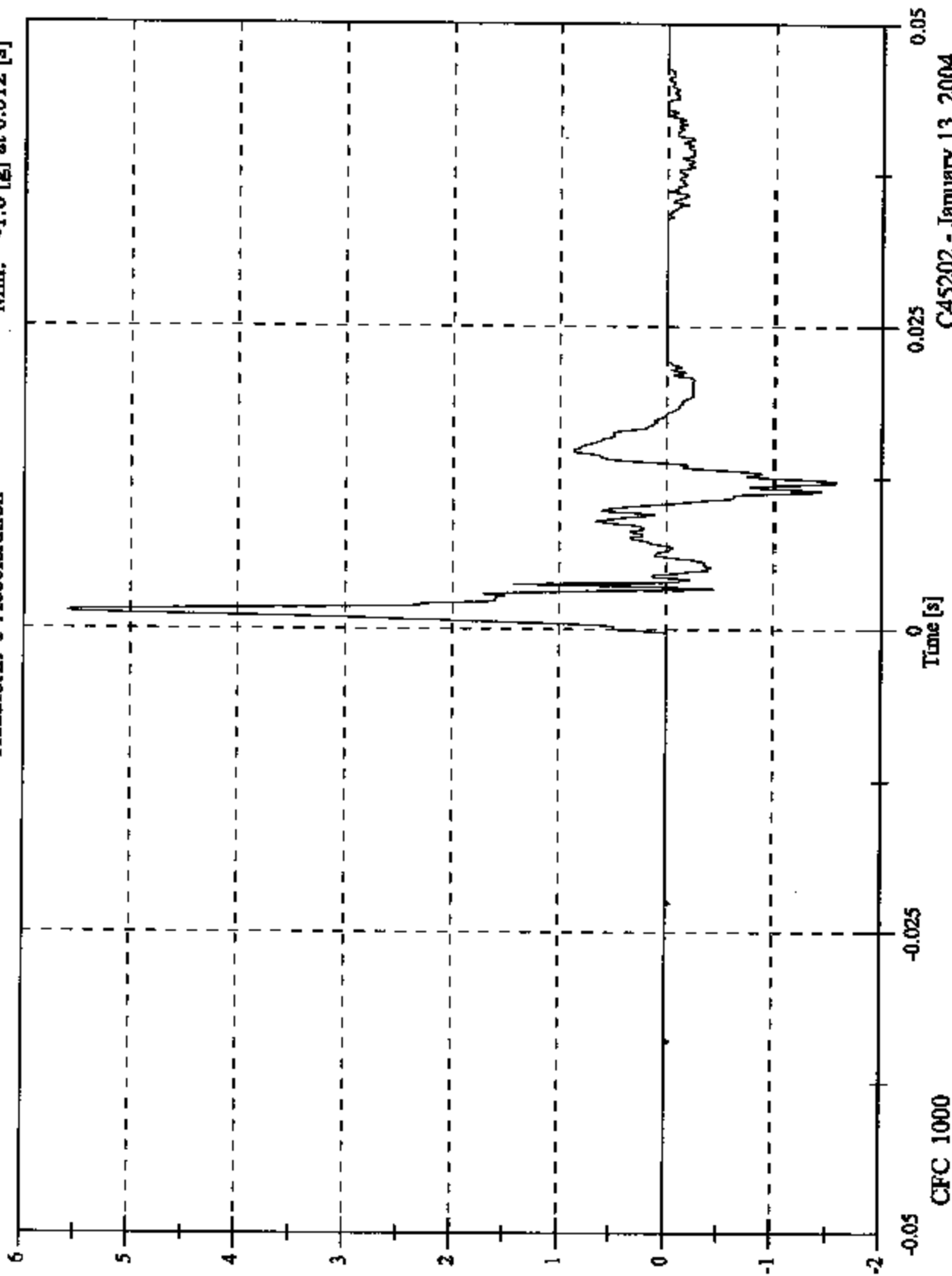


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Max: 5.6 [g] at 0.001 [s]
Min: -1.6 [g] at 0.012 [s]

Headform Y Acceleration

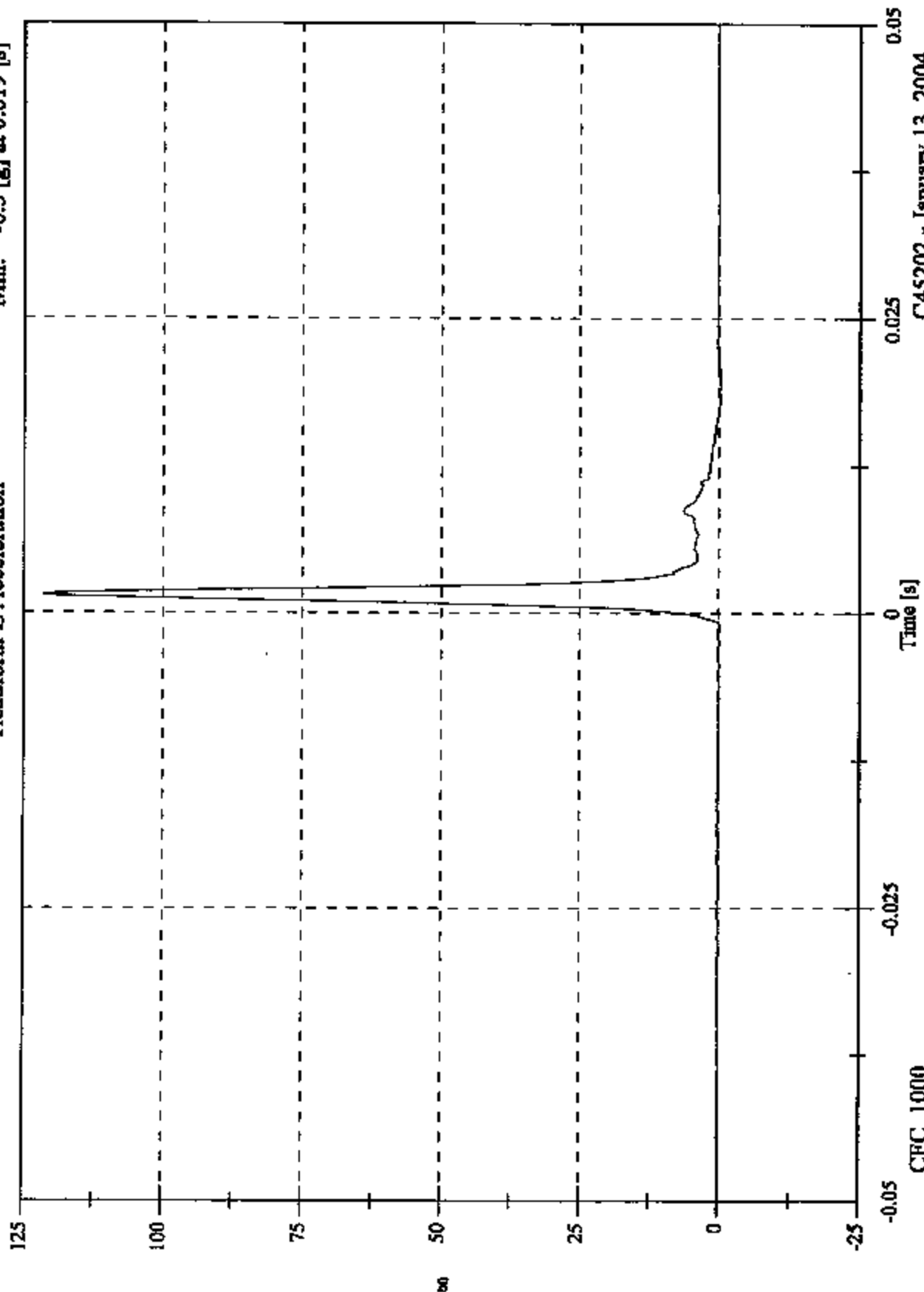


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Headform Z Acceleration

Max: 121.5 [g] at 0.002 [s]
Min: -0.5 [g] at 0.019 [s]

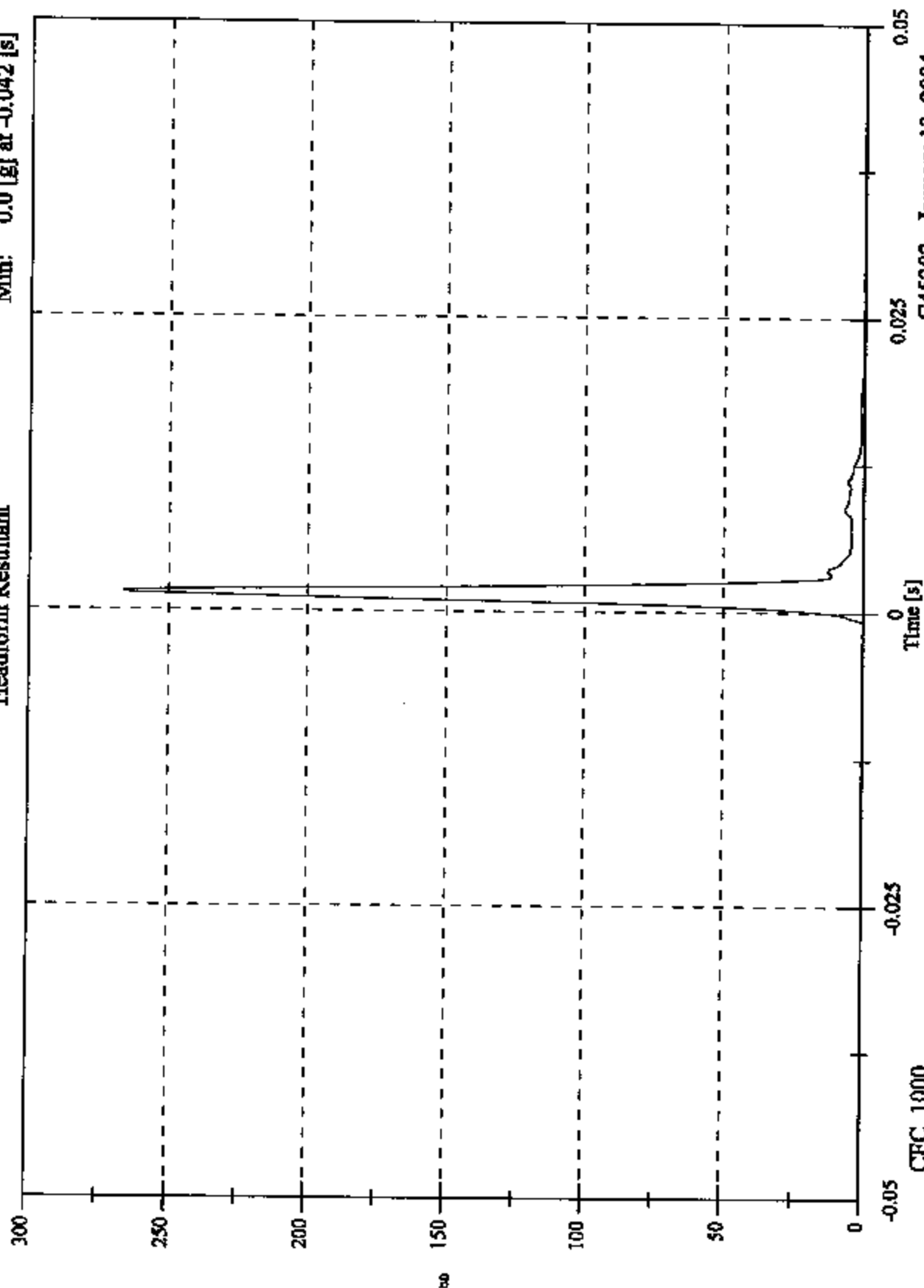


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Headform Resultant

Max: 266.3 [g] at 0.002 [s]
Min: 0.0 [g] at -0.042 [s]



C45202 - January 13, 2004

**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS
SERIAL NUMBER:		0062
CALIBRATION DATE:		January 13, 2004
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	24
RELATIVE HUMIDITY	10% to 70%	30
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	258.7
PEAK LATERAL ACCELERATION	15 Gs Maximum	1.6
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

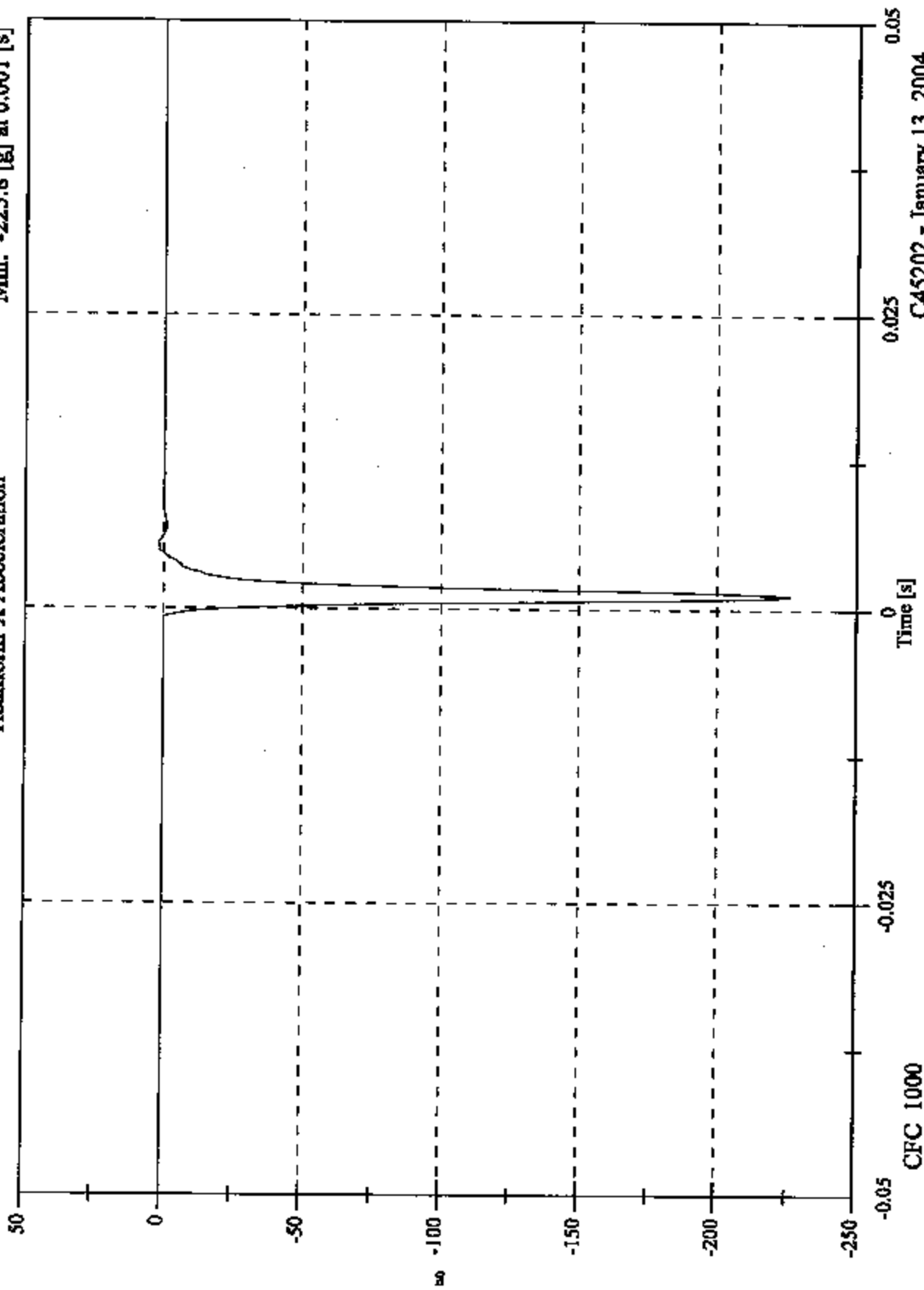
ID NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J33127	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J33019	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J32782	08/22/03	02/23/04

REMARKS:

FMVSS 201U - Headform Calibration Drops

Headform X Acceleration

Max: 1.6 [g] at 0.006 [s]
Min: -225.8 [g] at 0.001 [s]

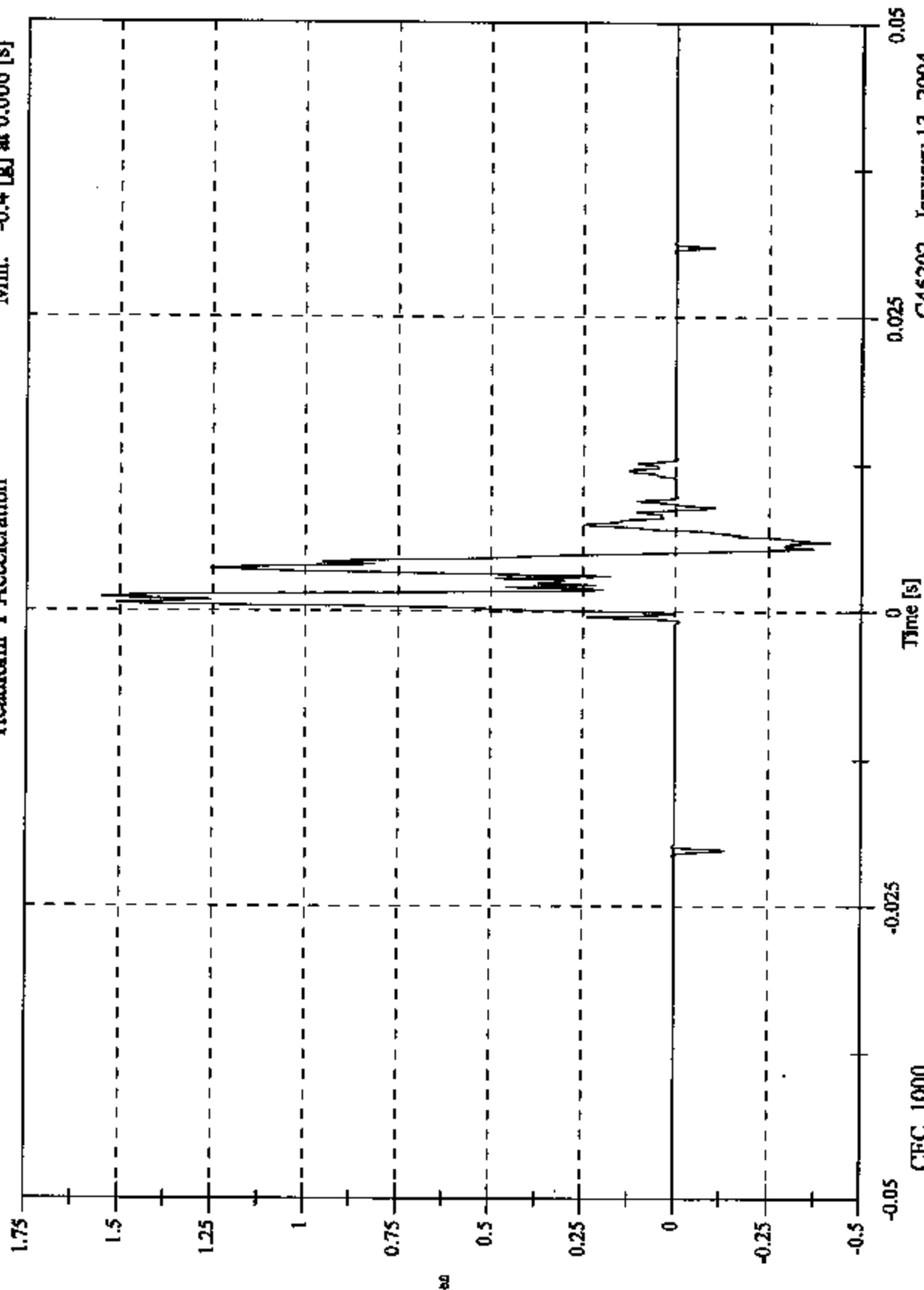


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Max: 1.6 [g] at 0.001 [s]
Min: -0.4 [g] at 0.006 [s]

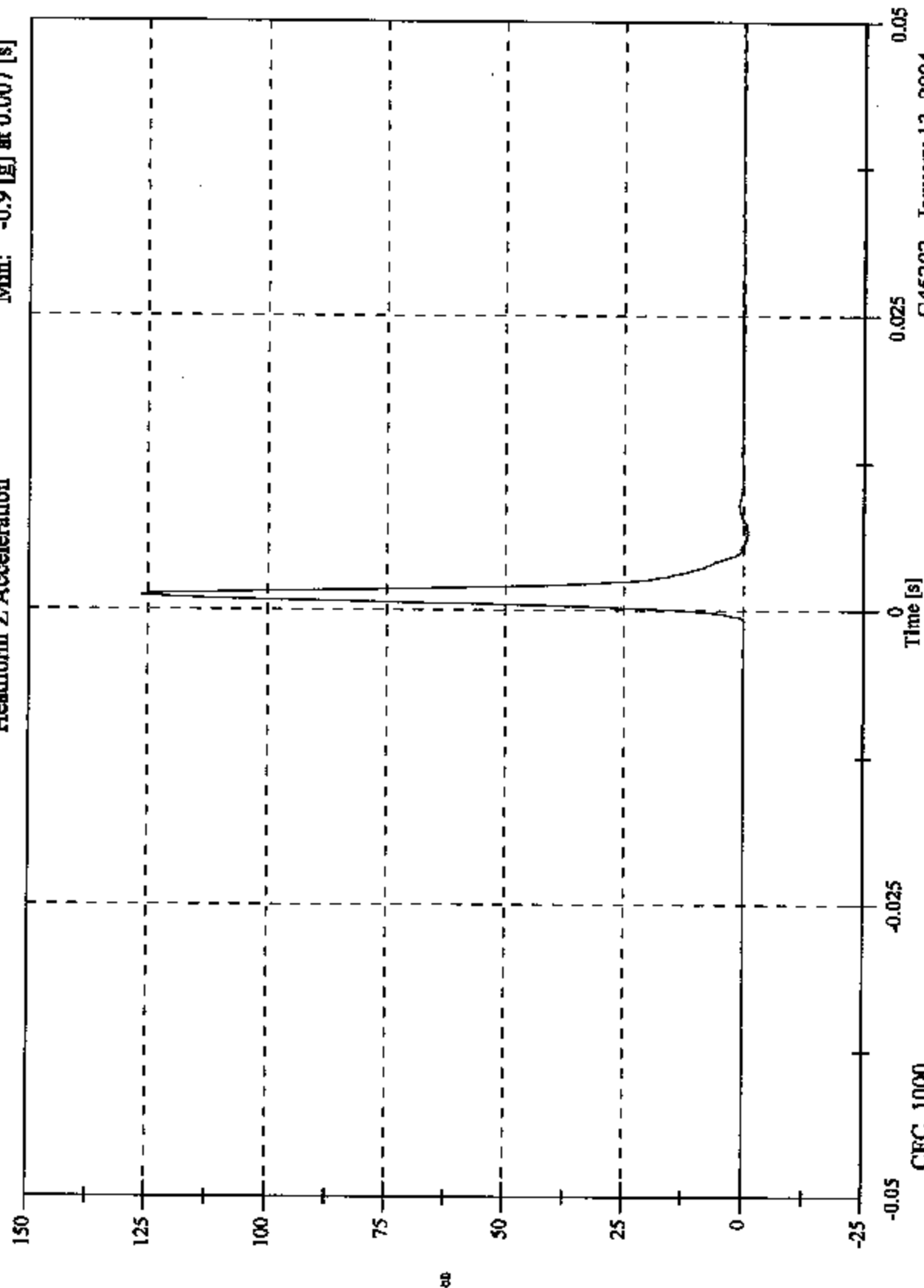
Headform Y Acceleration



FMVSS 201U - Headform Calibration Drops

Max: 126.2 [g] at 0.001 [s]
Min: -0.9 [g] at 0.007 [s]

Headform Z Acceleration

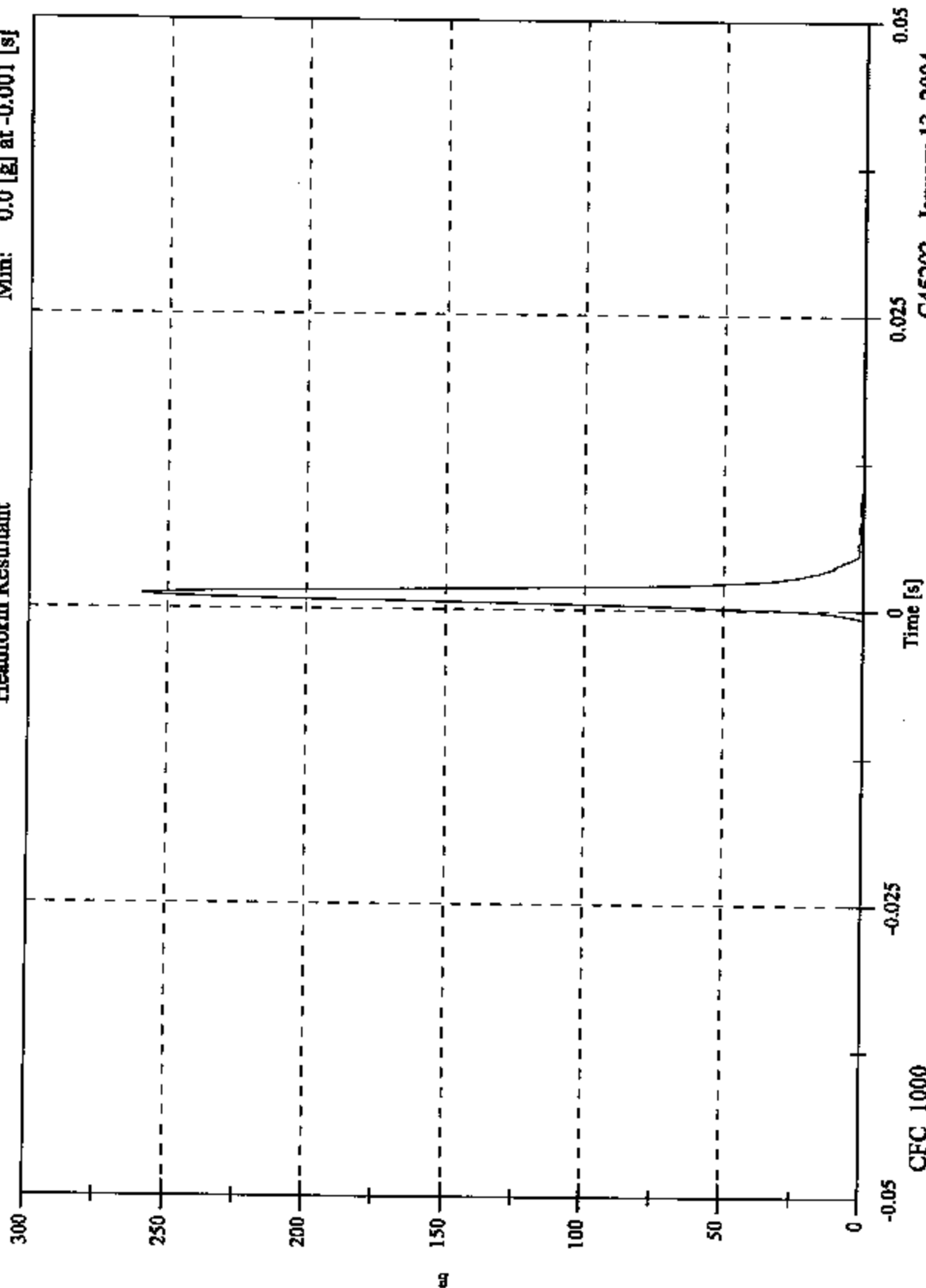


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Headform Resultant

Max: 258.7 [g] at 0.001 [s]
Min: 0.0 [g] at -0.001 [s]



C45202 - January 13, 2004

**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS
SERIAL NUMBER:		905
CALIBRATION DATE:		January 13, 2004
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	24
RELATIVE HUMIDITY	10% to 70%	30
PEAK RESULTANT ACCELERATION	235 Gs to 275 Gs	236.4
PEAK LATERAL ACCELERATION	15 Gs Maximum	2.3
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

ID NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J38127	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J37988	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J37854	08/22/03	02/23/04

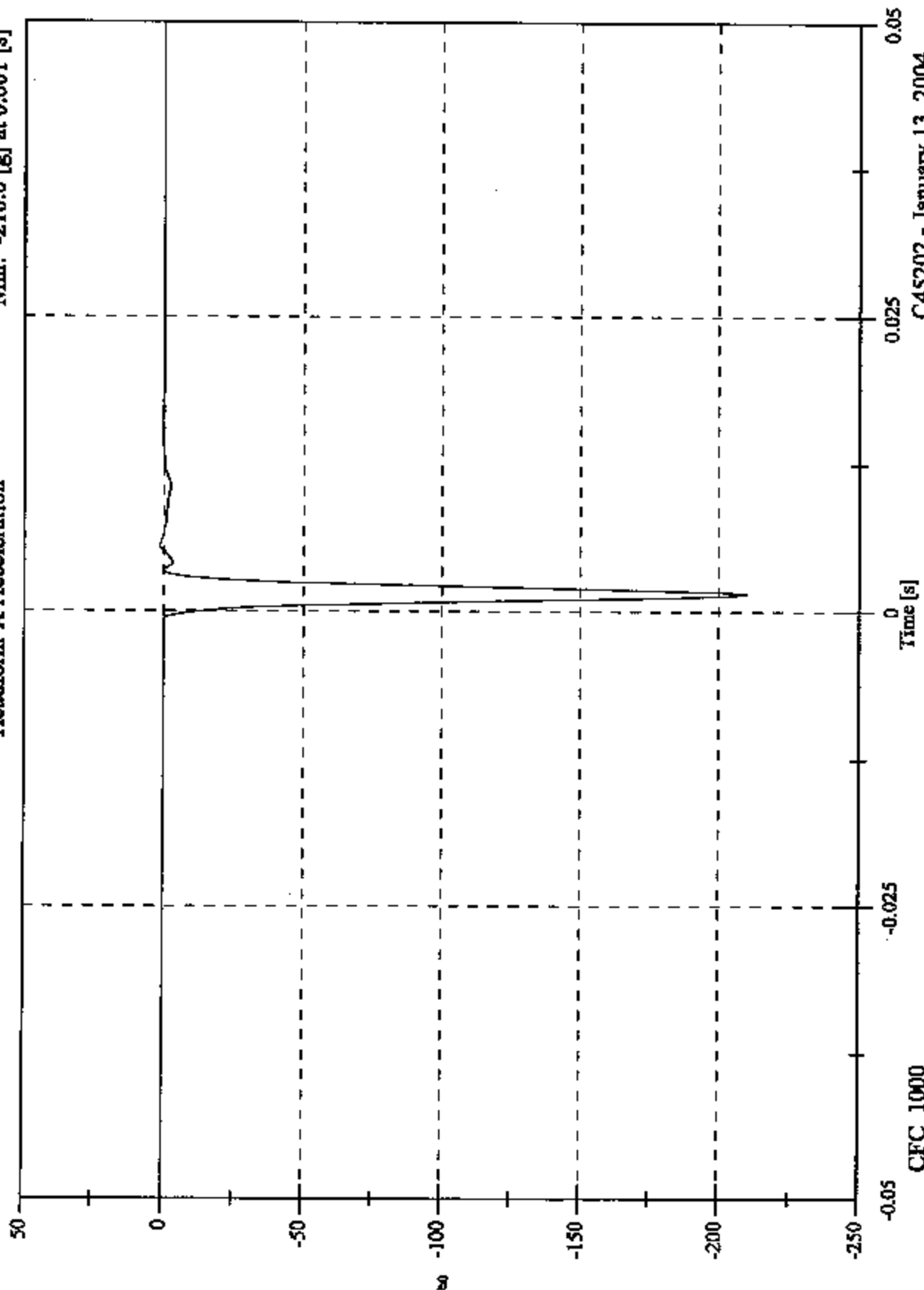
REMARKS:

FMVSS 201U - Headform Calibration Drops

Max: 1.3 [g] at 0.006 [s]

Min: -210.0 [g] at 0.001 [s]

Headform X Acceleration



CFC_1000

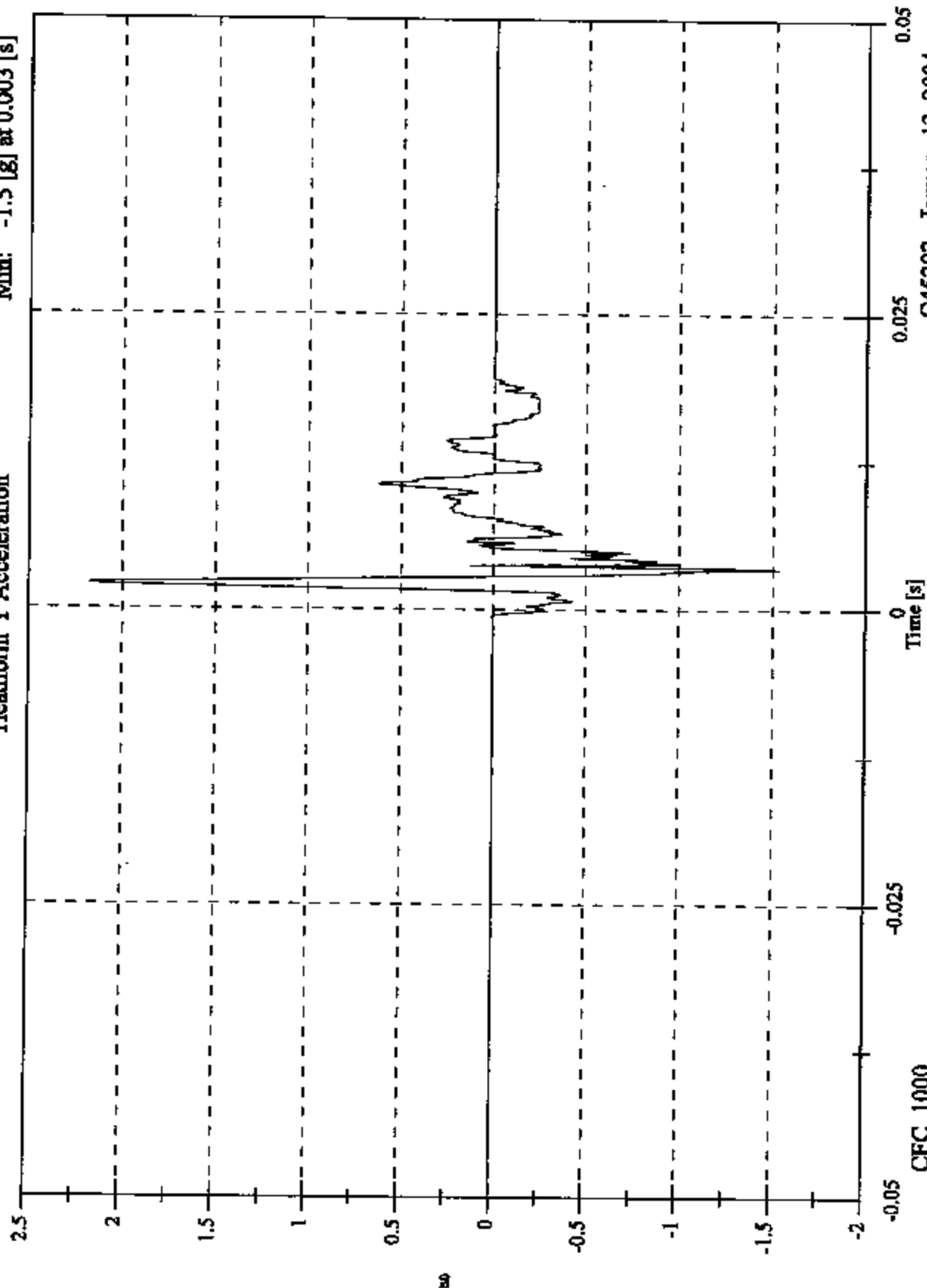
Time [s]

C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Max: 2.2 [g] at 0.002 [s]
Min: -1.5 [g] at 0.003 [s]

Headform Y Acceleration

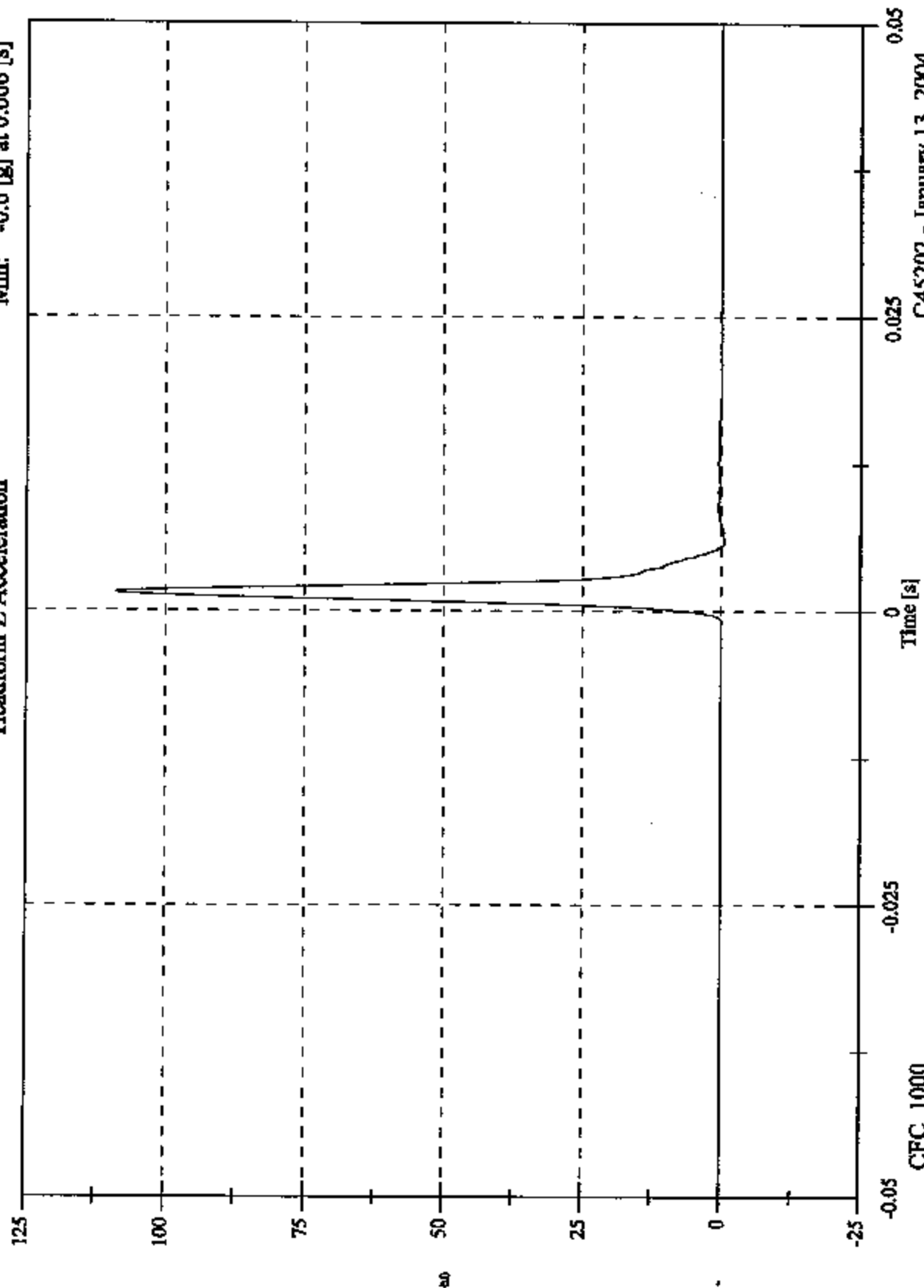


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Max: 108.9 [g] at 0.002 [s]
Min: -0.6 [g] at 0.006 [s]

Headform Z Acceleration

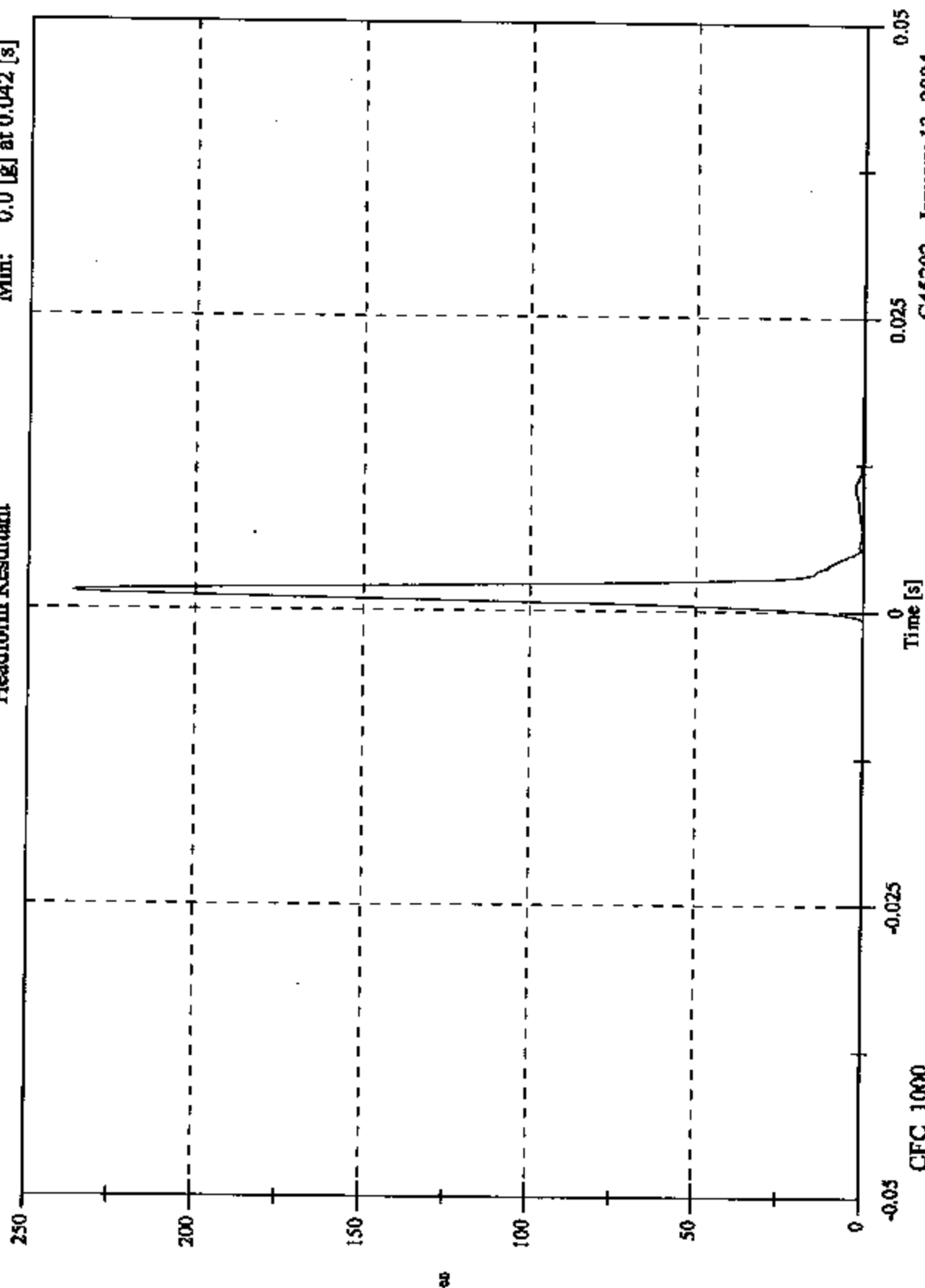


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Max: 236.4 [g] at 0.001 [s]
Min: 0.0 [g] at 0.042 [s]

Headform Resultant



C45202 - January 13, 2004

**PART 572L
HEAD DROP PRE-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS
SERIAL NUMBER:		0385
CALIBRATION DATE:		January 13, 2004
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	24
RELATIVE HUMIDITY	10% to 70%	30
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	243.6
PEAK LATERAL ACCELERATION	15 Gs Maximum	19
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

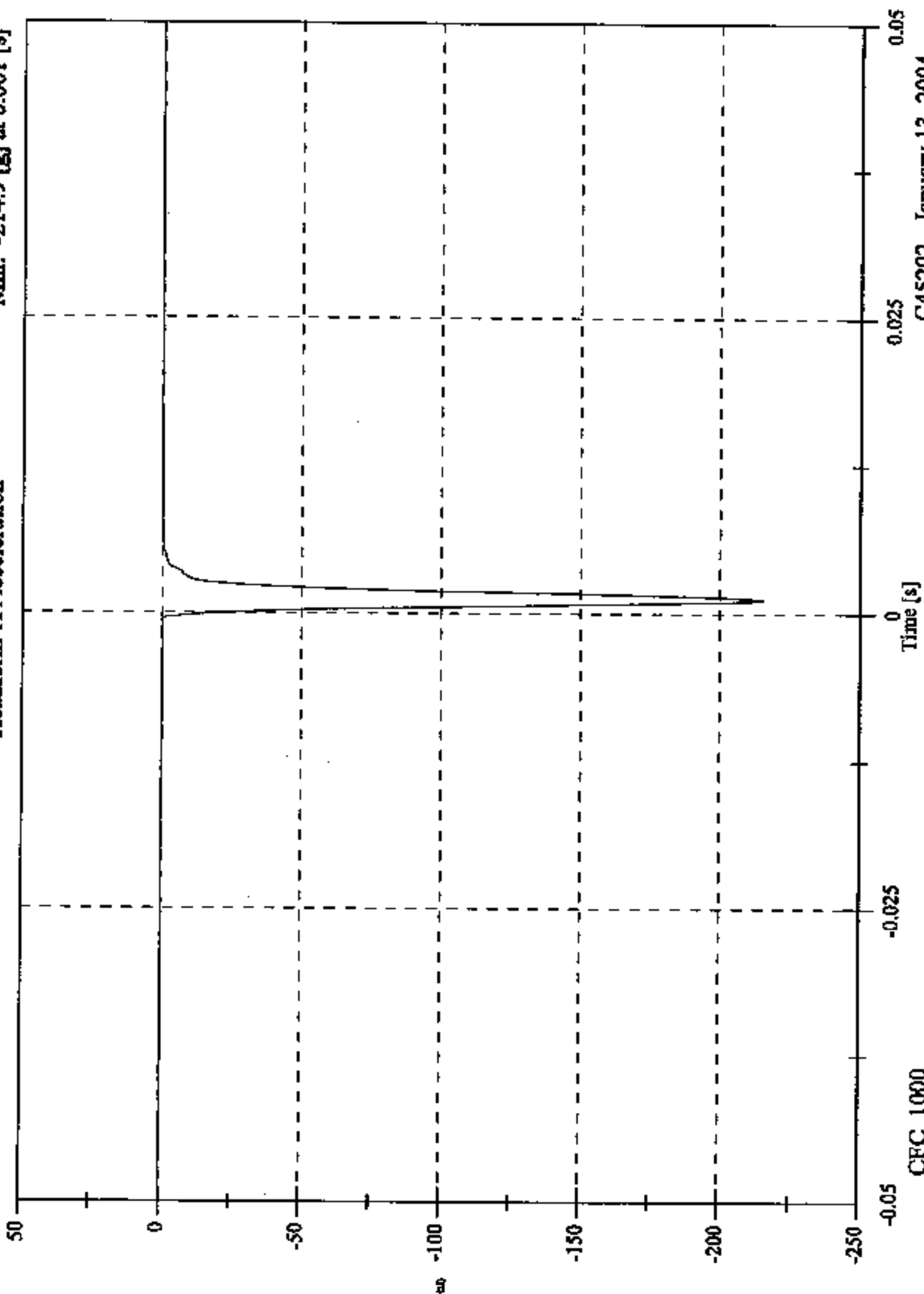
ID. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J28671	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J32779	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J25854	08/22/03	02/23/04

REMARKS:

FMVSS 201U - Headform Calibration Drops

Headform X Acceleration

Max: 0.4 [g] at 0.018 [s]
Min: -214.9 [g] at 0.001 [s]

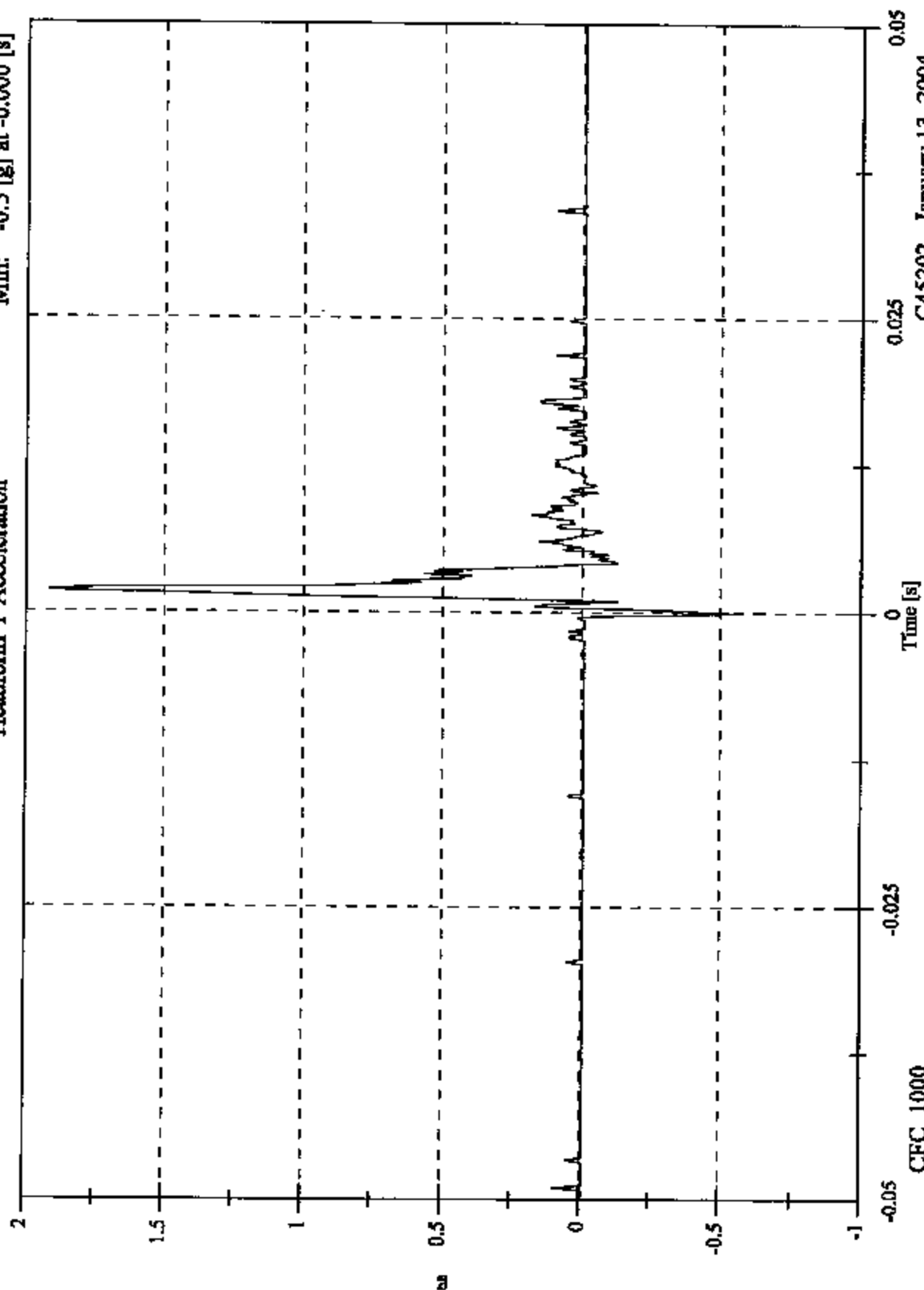


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Max: 1.9 [g] at 0.002 [s]
Min: -0.5 [g] at -0.000 [s]

Headform Y Acceleration

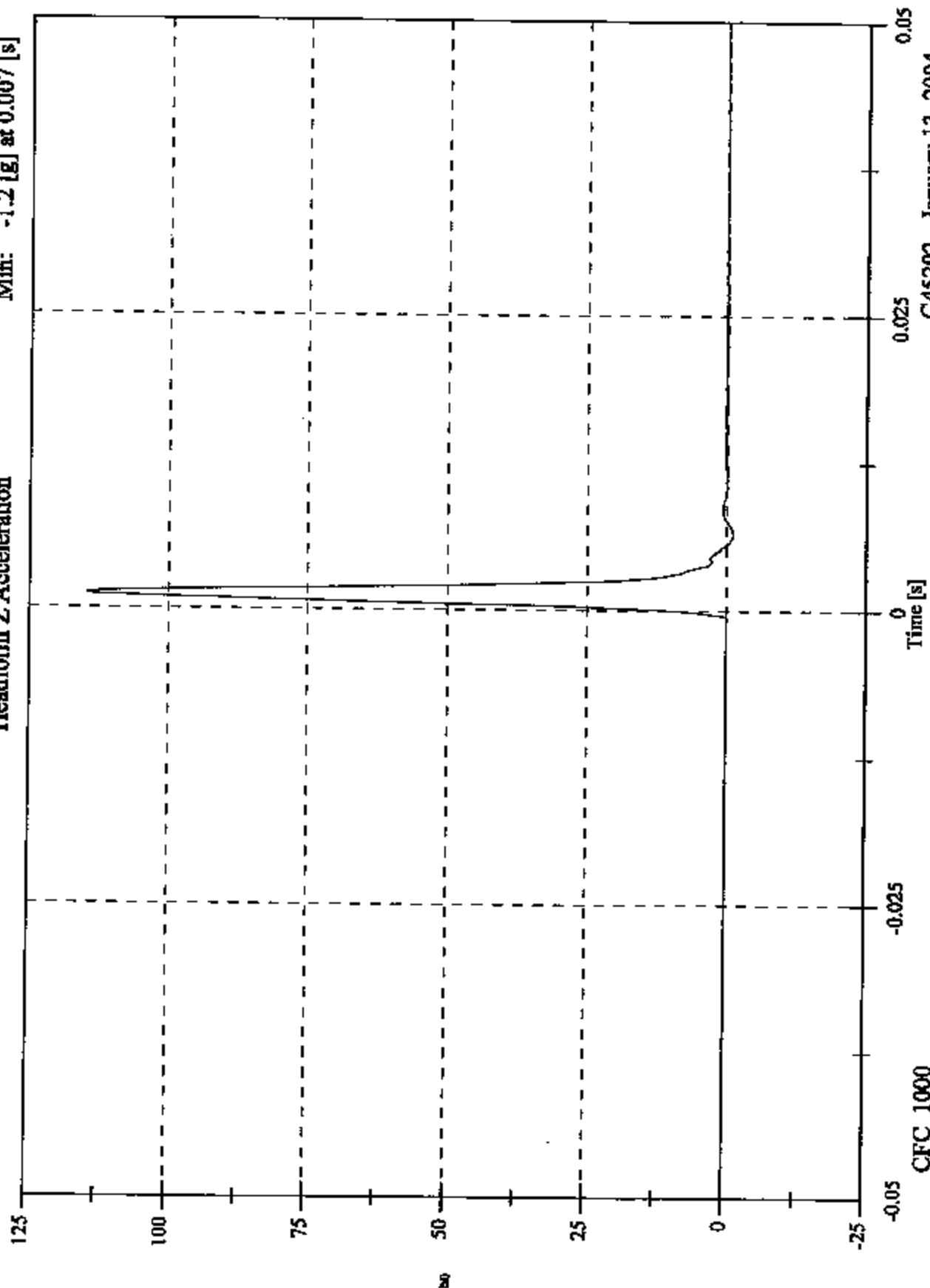


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Headform Z Acceleration

Max: 114.6 [g] at 0.001 [s]
Min: -1.2 [g] at 0.007 [s]

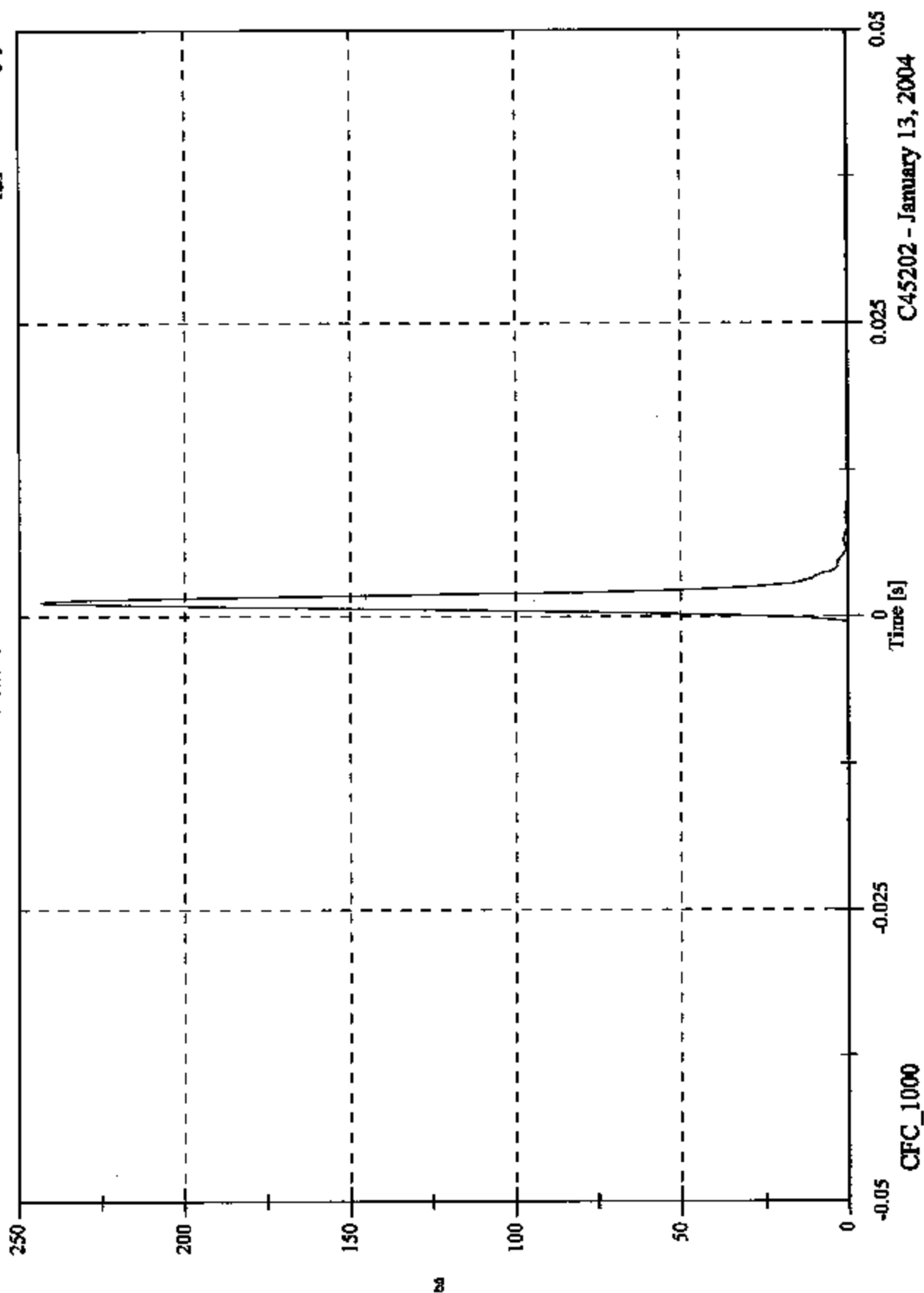


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Max: 243.4 [g] at 0.001 [s]
Min: 0.0 [g] at -0.001 [s]

Headform Resultant



C45202 - January 13, 2004

**PART 571L
HEAD DROP PRE-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS
SERIAL NUMBER:		1258
CALIBRATION DATE:		January 13, 2004
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	24
RELATIVE HUMIDITY	18% to 78%	30
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	258.5
PEAK LATERAL ACCELERATION	15 Gs Maximum	2.1
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

LD. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J41006	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J40994	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J41007	08/22/03	02/23/04

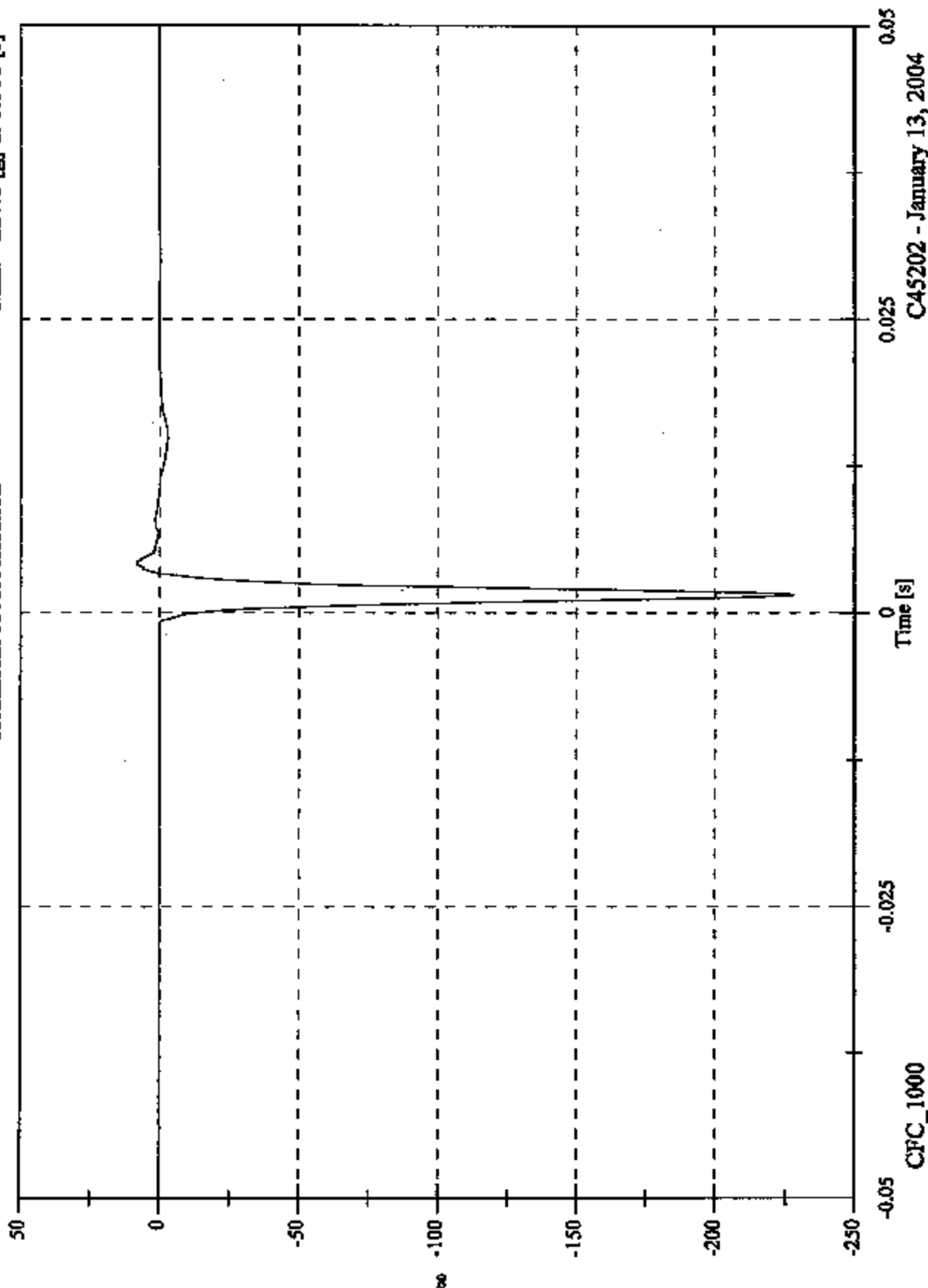
REMARKS:

FMVSS 201U - Headform Calibration Drops

Max: 8.4 [g] at 0.004 [s]

Min: -227.8 [g] at 0.001 [s]

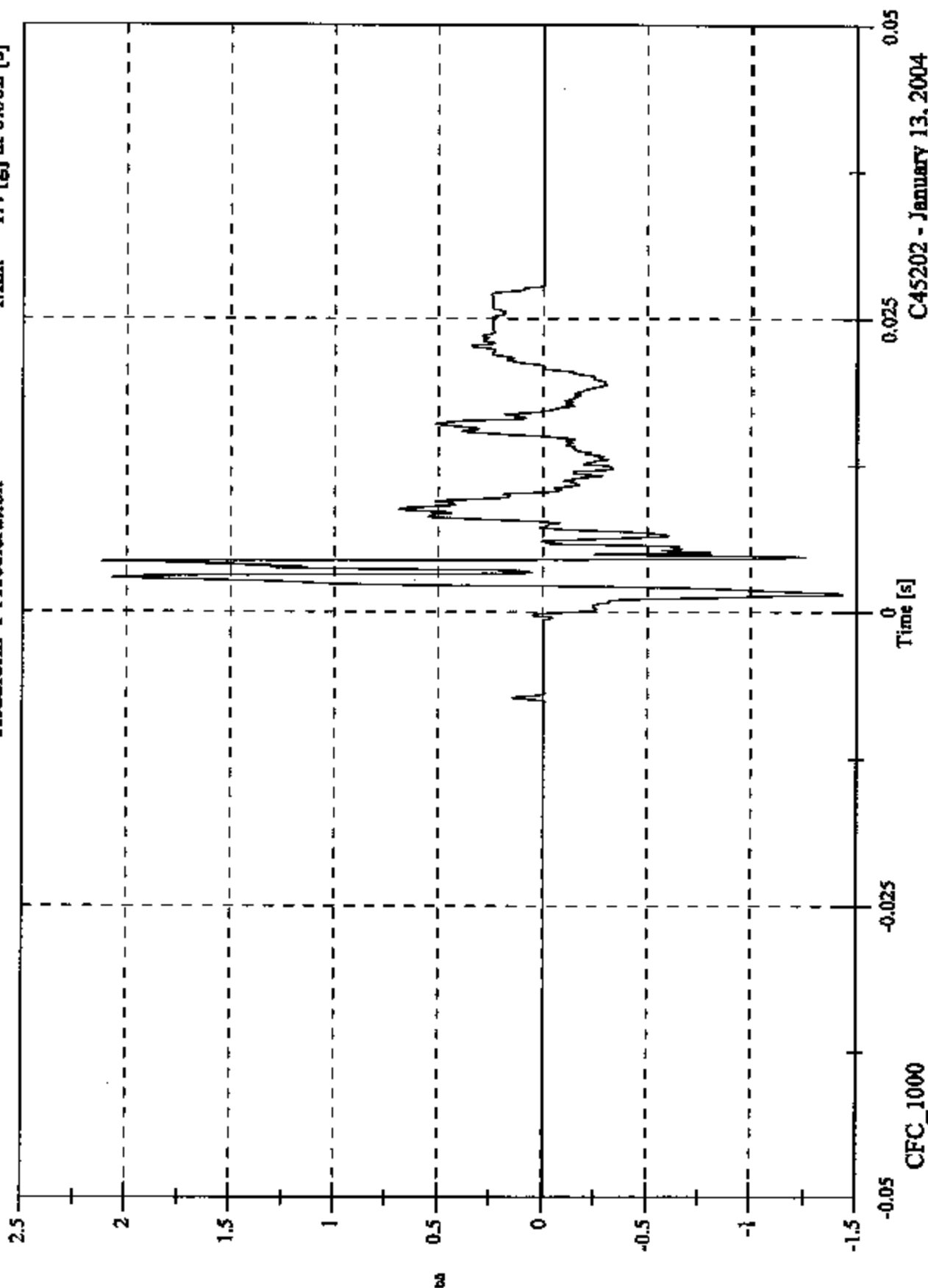
Headform X Acceleration



FMVSS 201U - Headform Calibration Drops

Max: 2.1 [g] at 0.004 [s]
Min: -1.4 [g] at 0.002 [s]

Headform Y Acceleration

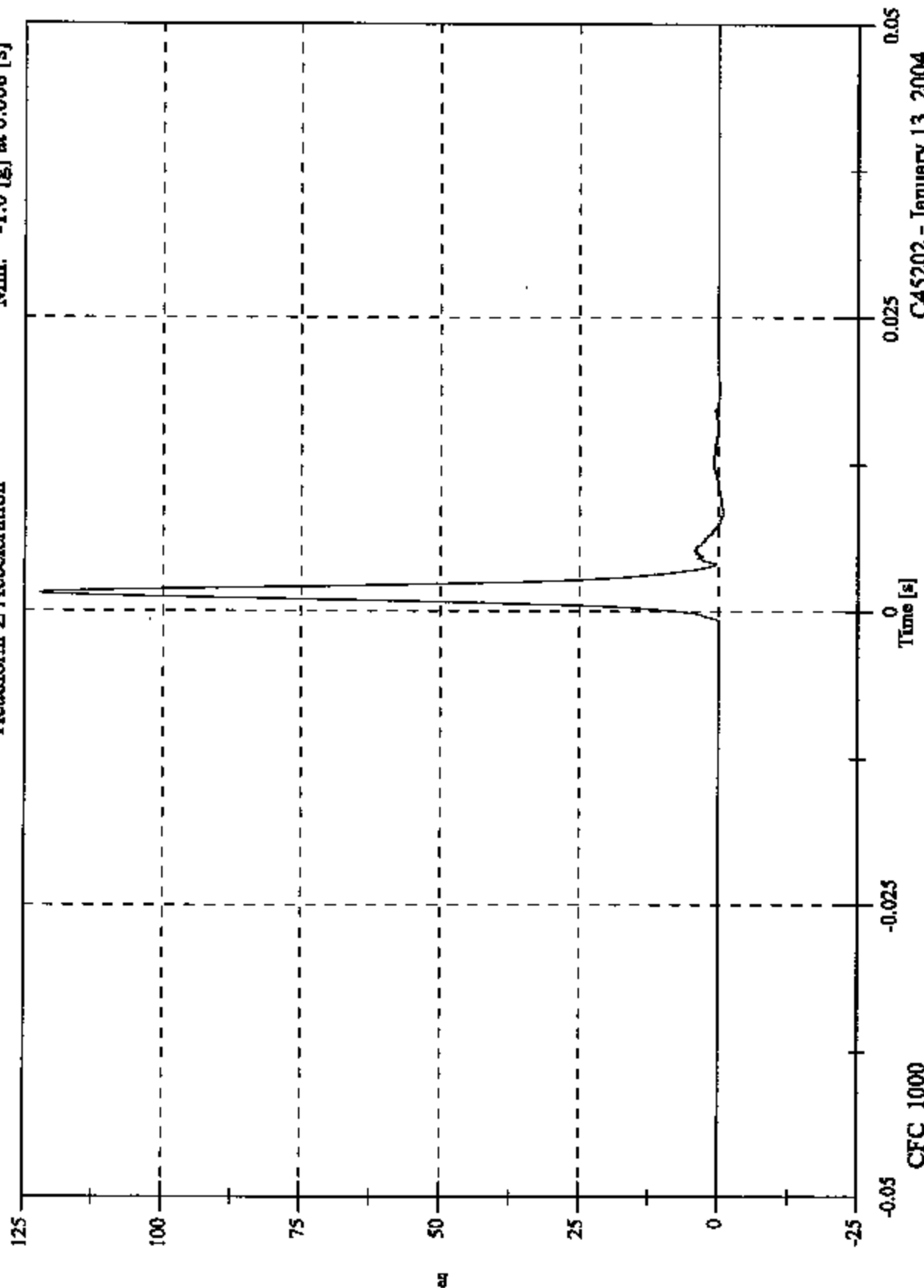


CFC_1000

FMVSS 201U - Headform Calibration Drops

Max: 122.2 [g] at 0.002 [s]
Min: -1.0 [g] at 0.008 [s]

Headform Z Acceleration

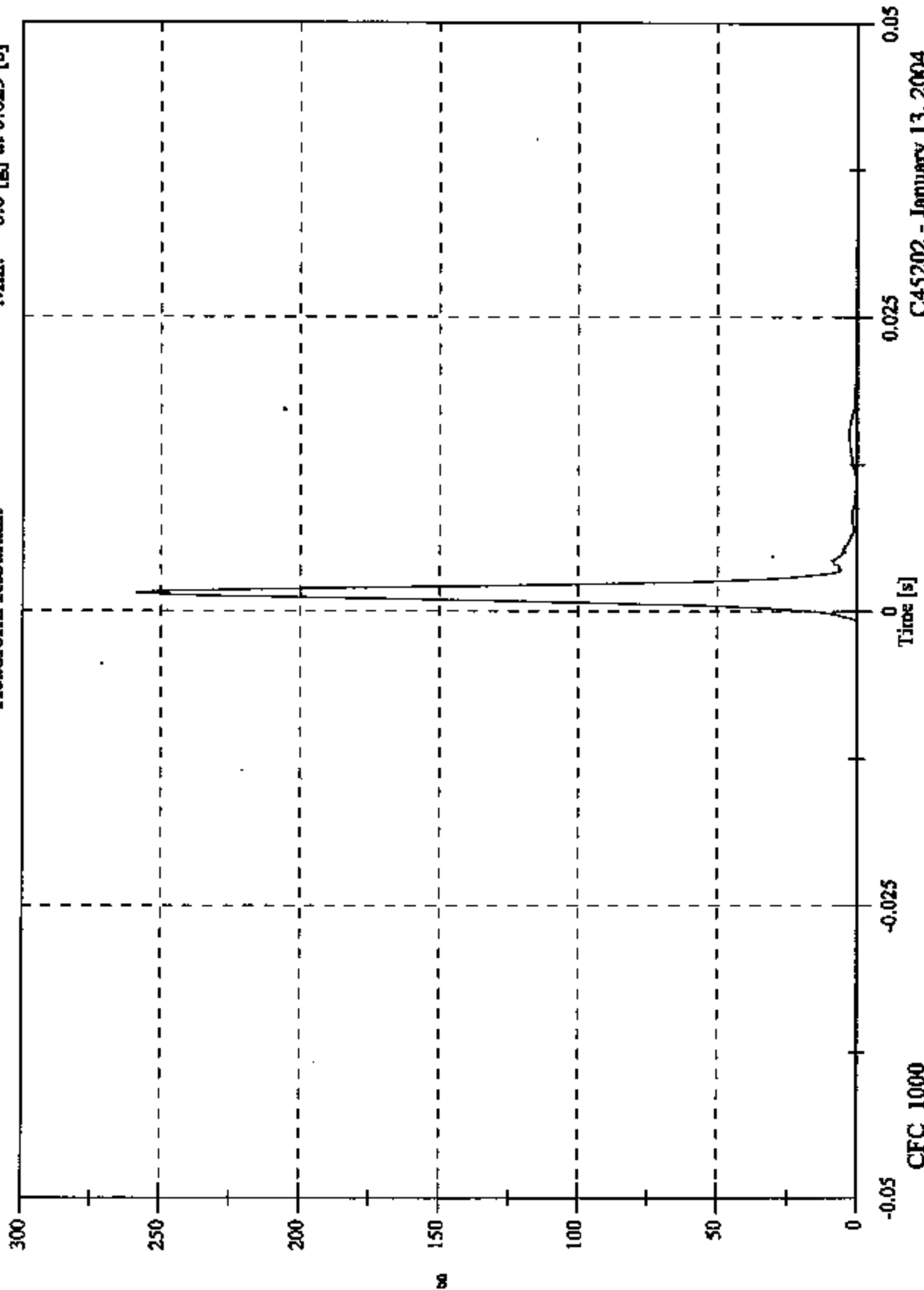


C45202 - January 13, 2004

FMVSS 201U - Headform Calibration Drops

Headform Resultant

Max: 258.5 [g] at 0.002 [s]
Min: 0.0 [g] at 0.029 [s]



CFC_1000

**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS
SERIAL NUMBER:		0642
CALIBRATION DATE:		January 27, 2003
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	21
RELATIVE HUMIDITY	10% to 70%	16
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	259.8
PEAK LATERAL ACCELERATION	15 Gs Maximum	1.7
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

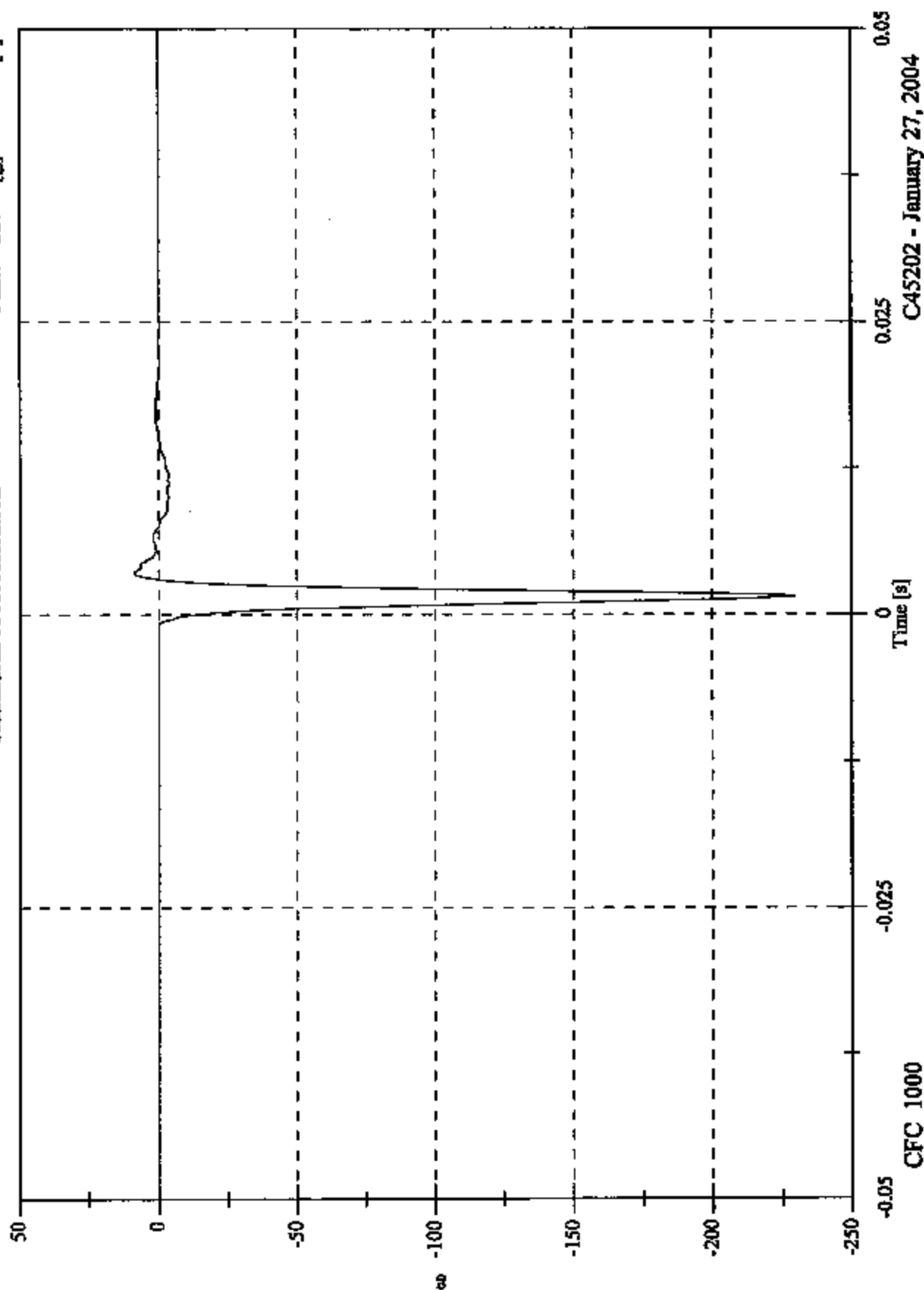
I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J24876	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J33830	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J31009	08/22/03	02/23/04

REMARKS:

FMVSS 201U - Headform Calibration Drops

Max: 8.7 [g] at 0.004 [s]
Min: -229.4 [g] at 0.002 [s]

Headform X Acceleration

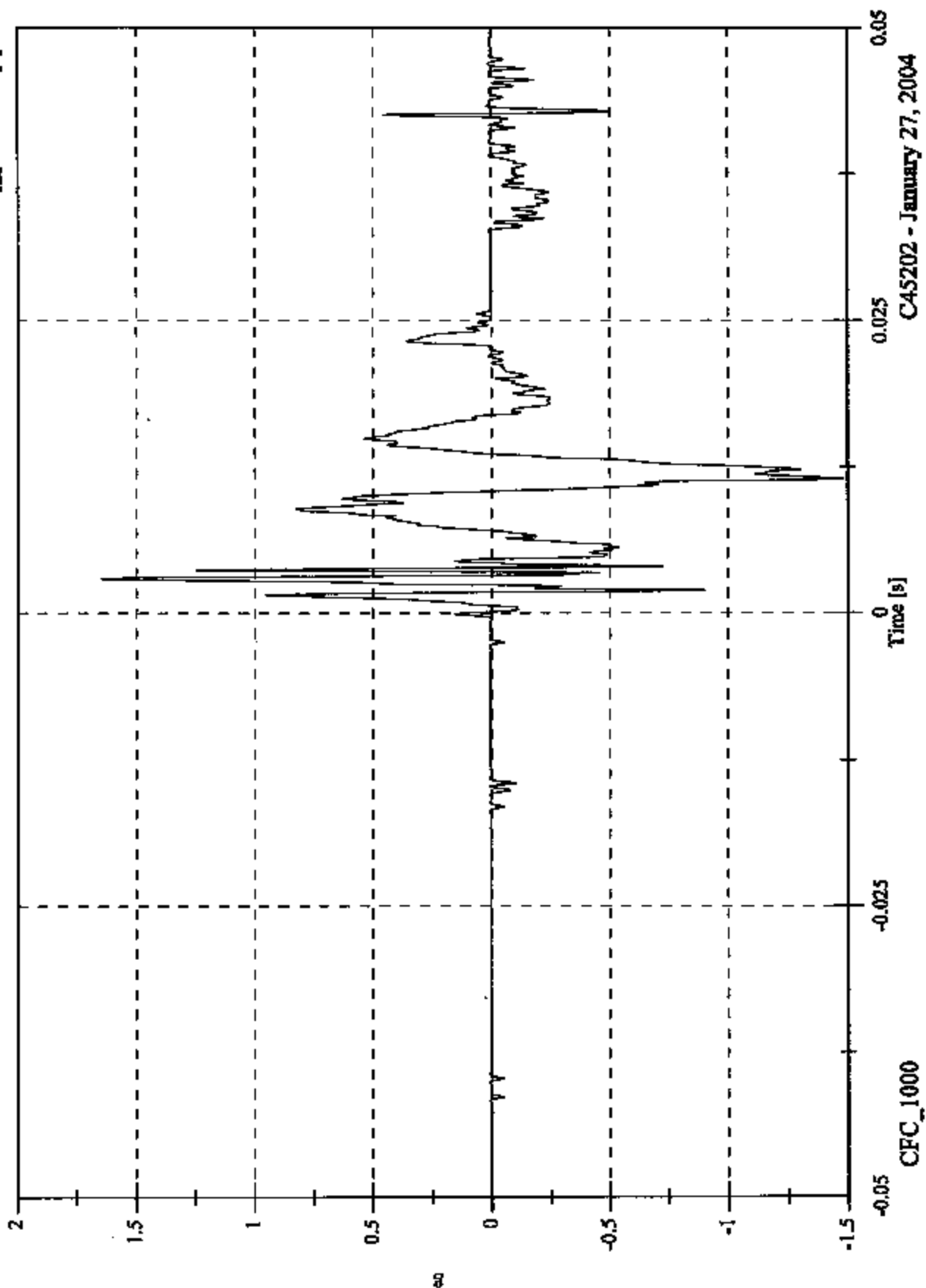


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Max: 1.7 [g] at 0.003 [s]
Min: -1.5 [g] at 0.011 [s]

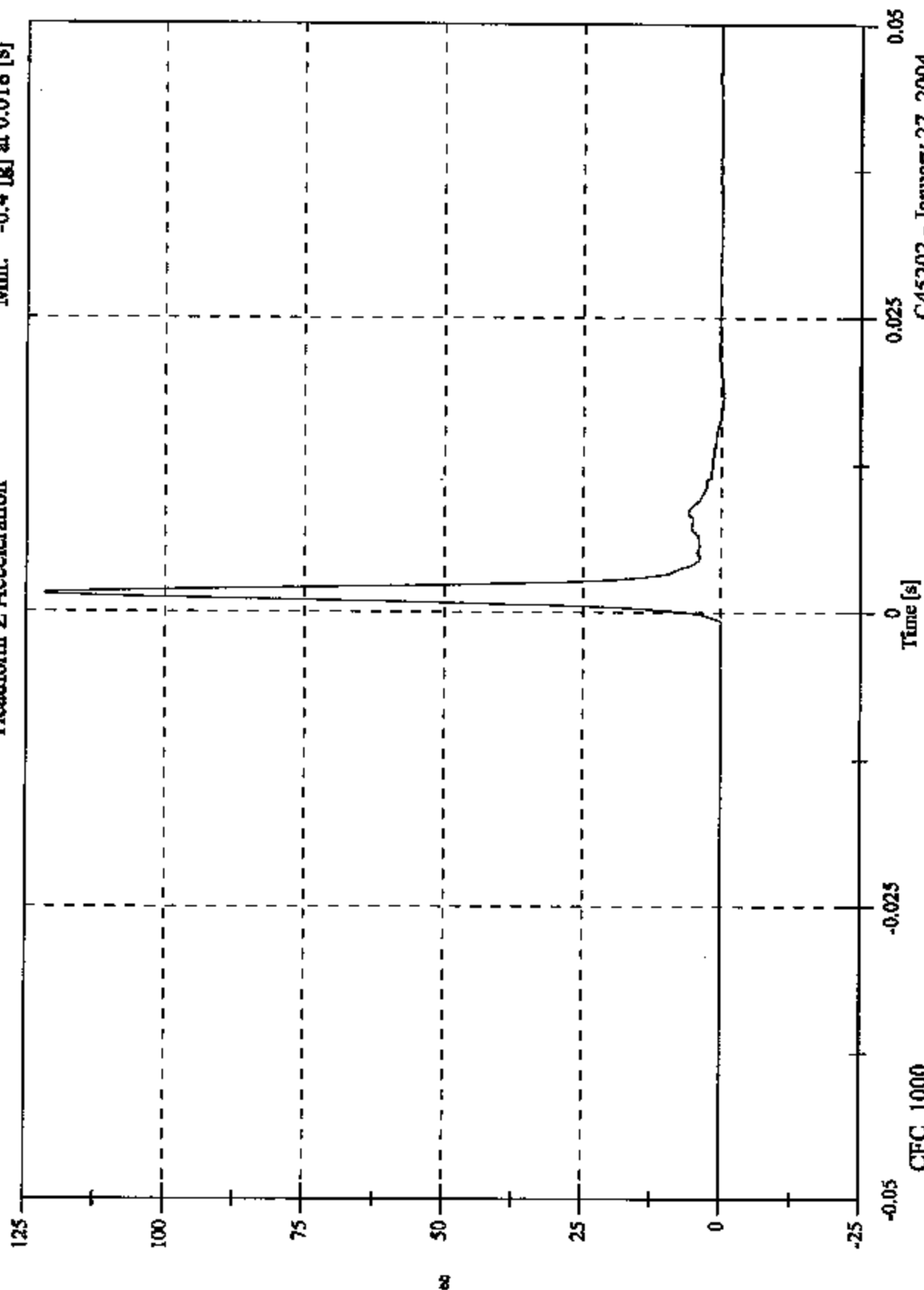
Headform Y Acceleration



FMVSS 201U - Headform Calibration Drops

Max: 121.9 [g] at 0.002 [s]
Min: -0.4 [g] at 0.018 [s]

Headform Z Acceleration

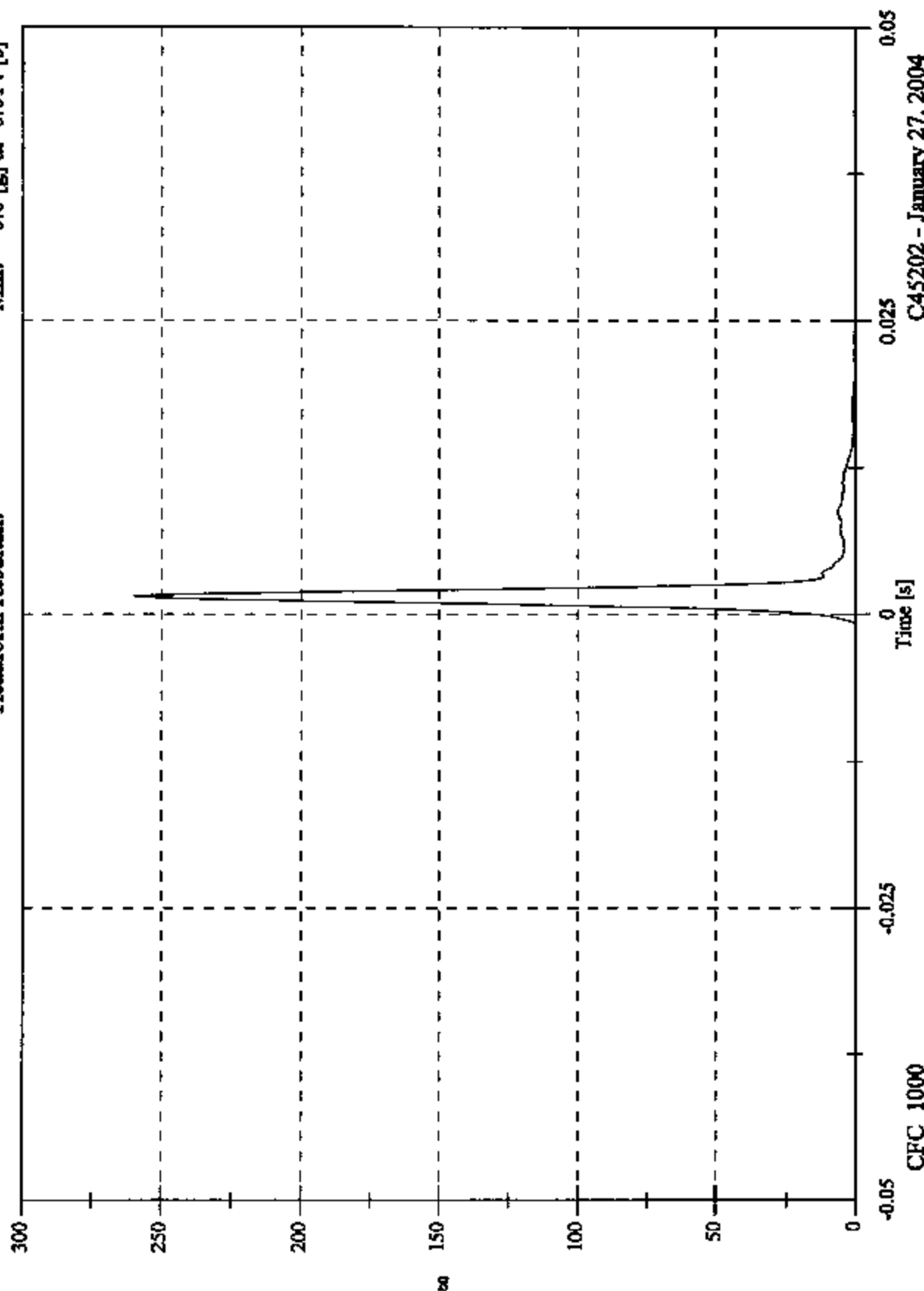


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Max: 259.8 [g] at 0.002 [s]
Min: 0.0 [g] at -0.014 [s]

Headform Resultant



C45202 - January 27, 2004

**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		0062	
CALIBRATION DATE:		January 27, 2003	
TEST PARAMETER	SPECIFICATION	TEST RESULTS	
TEMPERATURE	19°C to 26°C	21	
RELATIVE HUMIDITY	10% to 70%	16	
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	238.4	
PEAK LATERAL ACCELERATION	15 Gs Maximum	8.0	
IS ACCELERATION CURVE UNIMODAL?	YES	YES	

HEAD ACCELEROMETER CALIBRATION INFORMATION

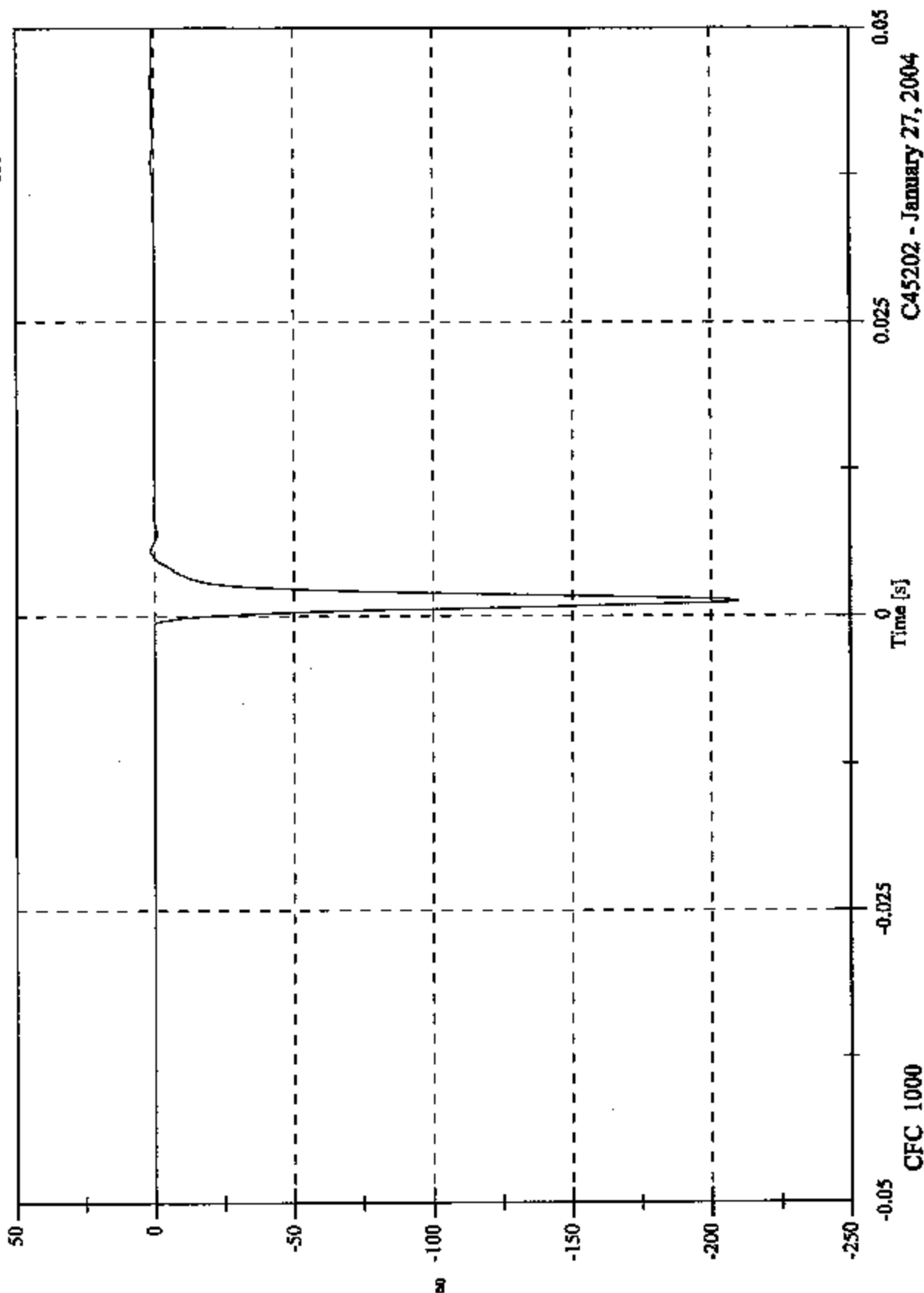
ID. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J33127	08/22/03	01/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J33019	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J32782	08/22/03	02/23/04

REMARKS:

FMVSS 201U - Headform Calibration Drops

Max: 1.7 [g] at 0.006 [s]
Min: -209.6 [g] at 0.001 [s]

Headform X Acceleration

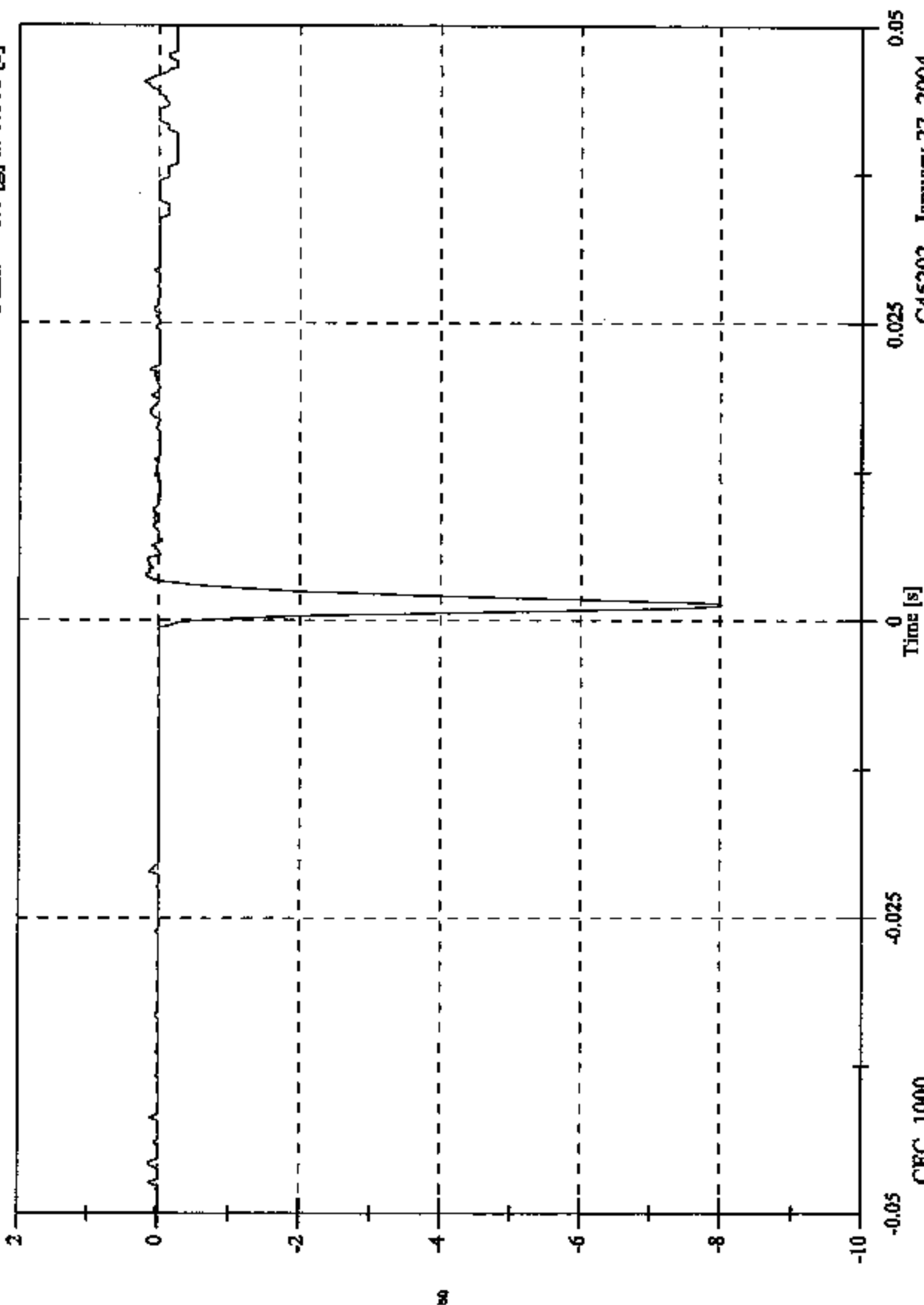


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Max: 0.2 [g] at 0.045 [s]
Min: -8.0 [g] at 0.001 [s]

Headform Y Acceleration

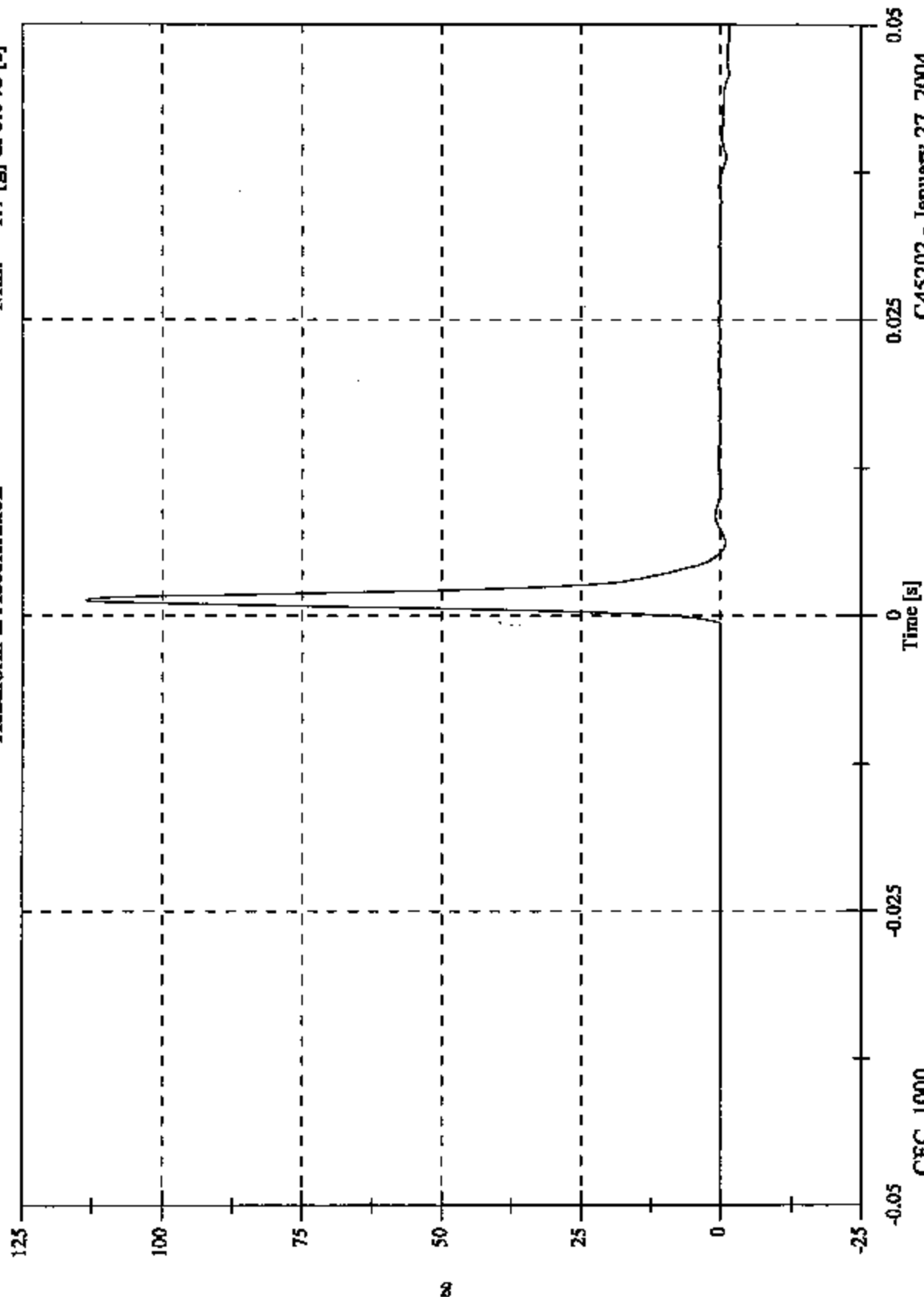


CFC_1000

FMVSS 201U - Headform Calibration Drops

Max: 113.5 [g] at 0.001 [s]
Min: -1.7 [g] at 0.046 [s]

Headform Z Acceleration

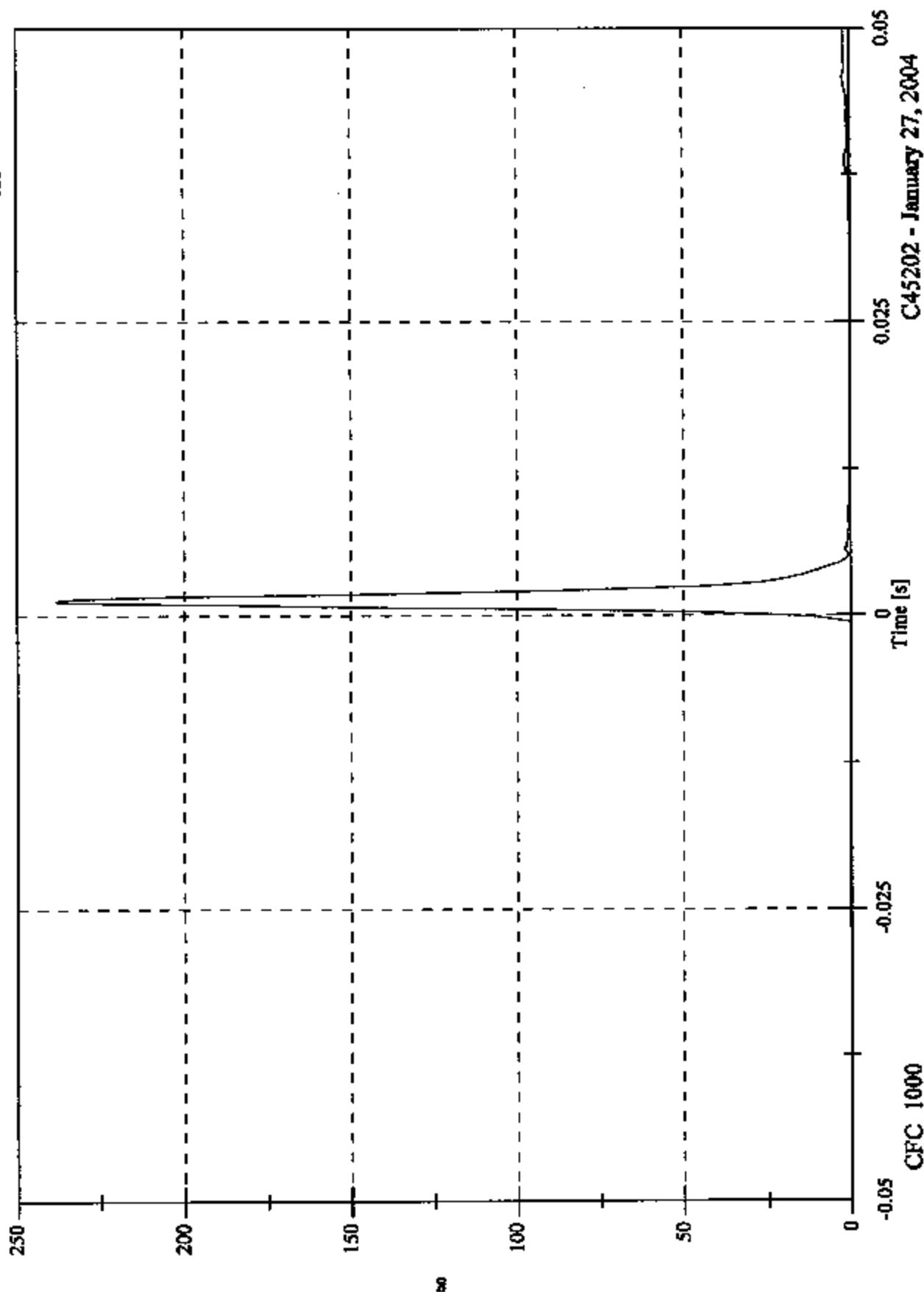


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Max: 238.4 [g] at 0.001 [s]
Min: 0.0 [g] at -0.050 [s]

Headform Resultant



C45202 - January 27, 2004

**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		806	
CALIBRATION DATE:		January 27, 2003	
TEST PARAMETER	SPECIFICATION		TEST RESULTS
TEMPERATURE	19°C to 26°C		21
RELATIVE HUMIDITY	10% to 70%		16
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs		242.8
PEAK LATERAL ACCELERATION	15 Gs Maximum		1.7
IS ACCELERATION CURVE UNIMODAL?	YES		YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

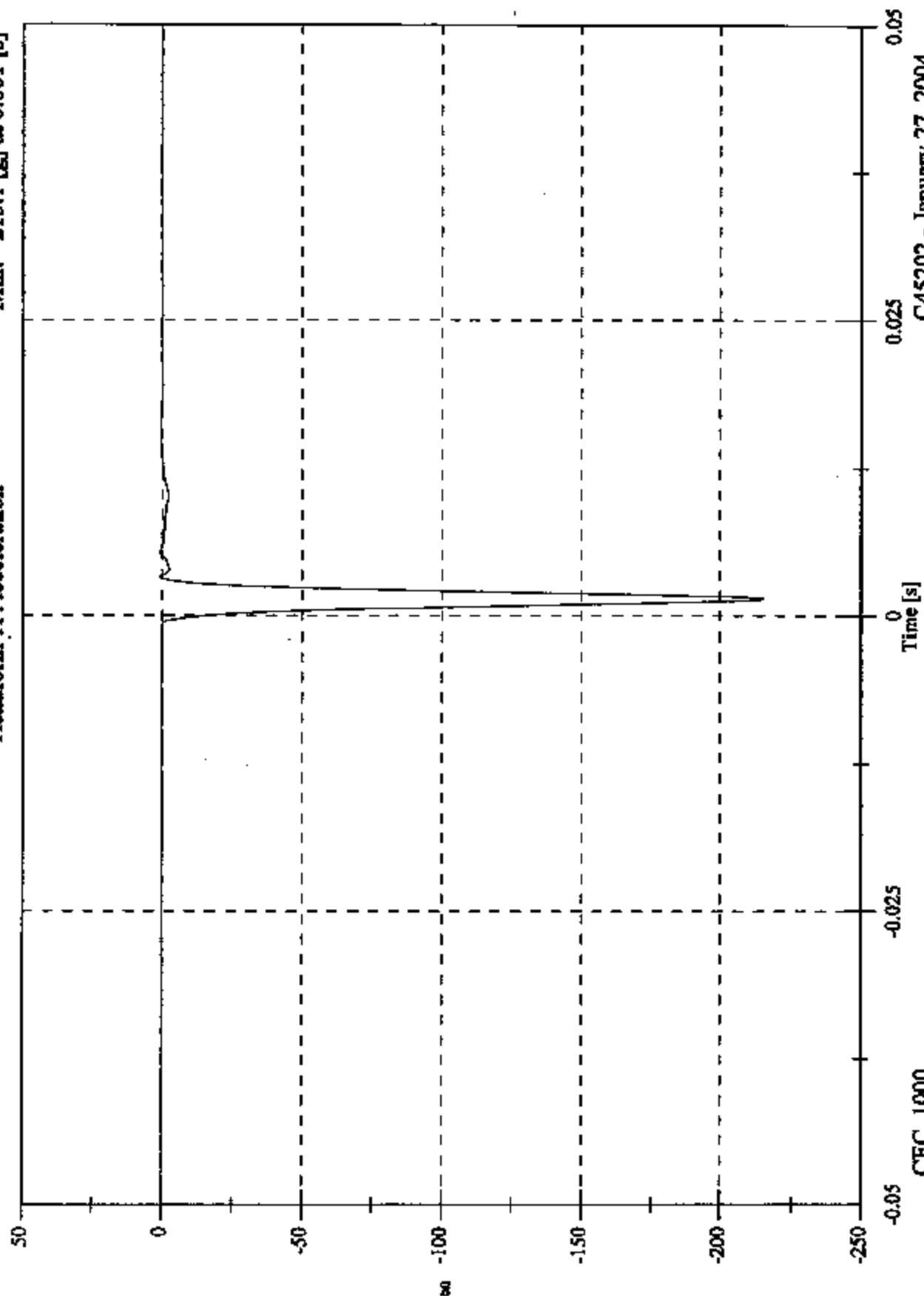
I.D. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J38127	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J37980	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J37854	08/22/03	02/23/04

REMARKS:

FMVSS 201U - Headform Calibration Drops

Max: 0.8 [g] at 0.003 [s]
Min: -215.1 [g] at 0.001 [s]

Headform X Acceleration

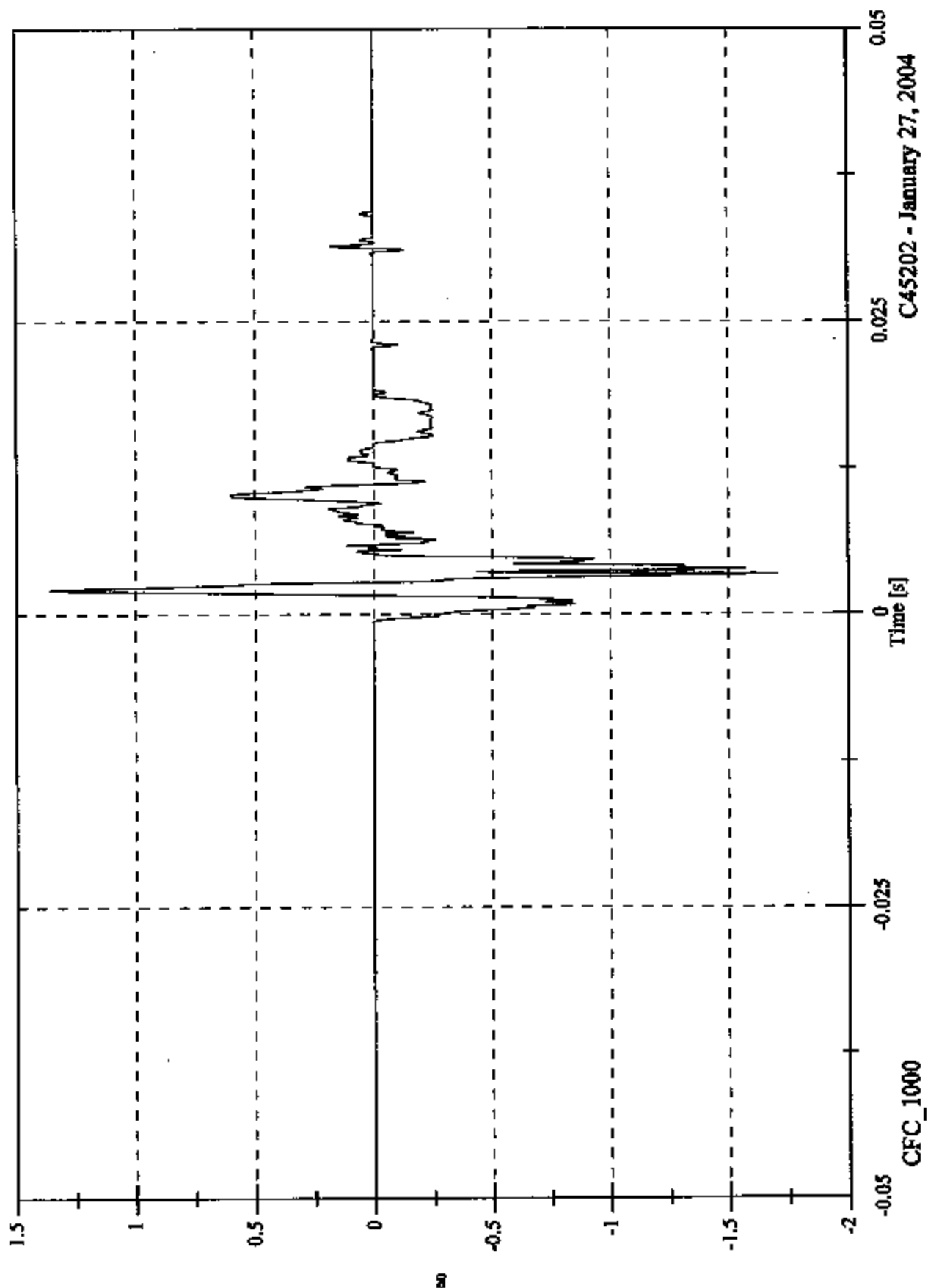


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Max: 1.4 [g] at 0.002 [s]
Min: -1.7 [g] at 0.003 [s]

Headform Y Acceleration

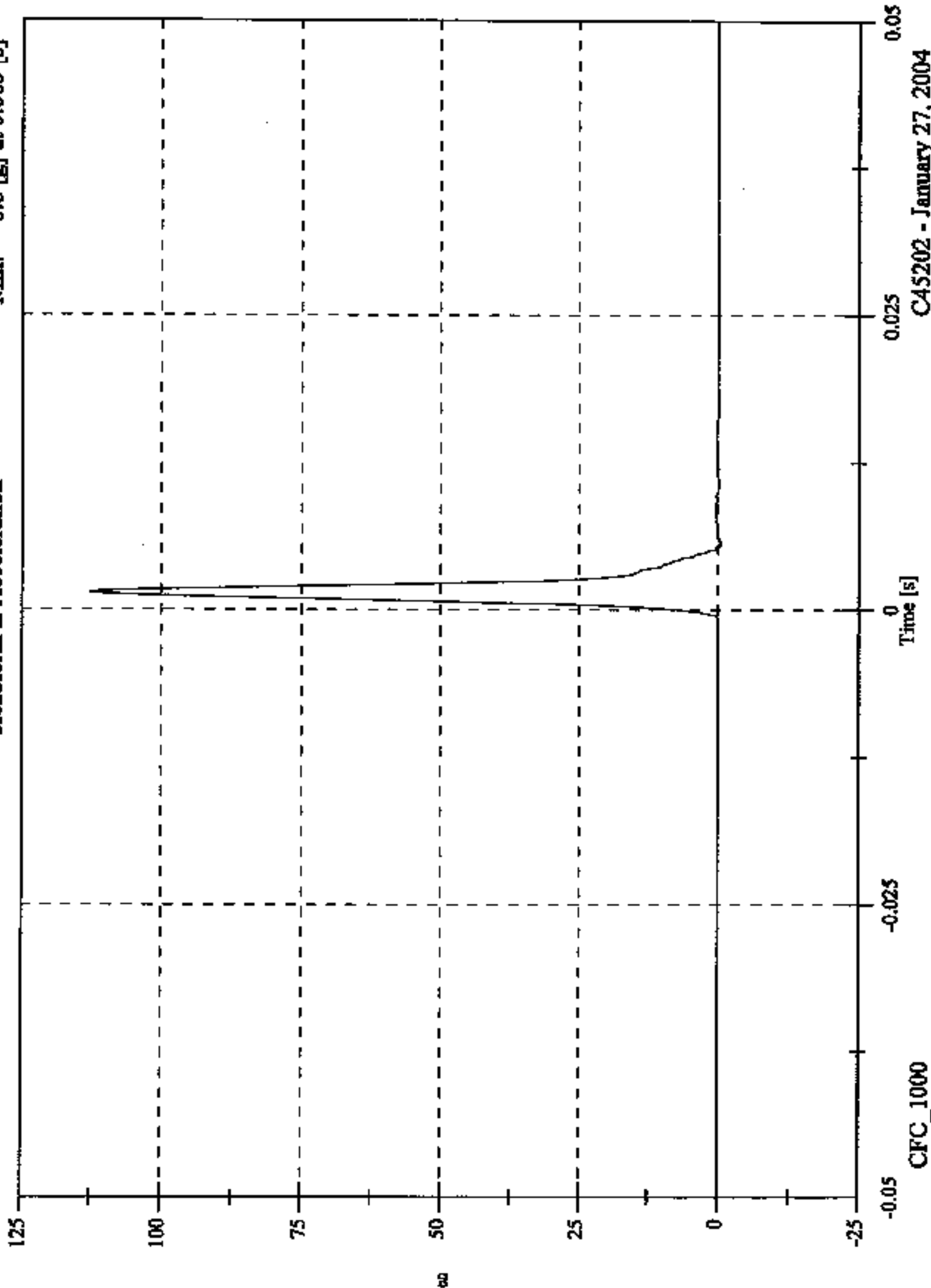


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Headform Z Acceleration

Max: 112.6 [g] at 0.001 [s]
Min: -0.6 [g] at 0.005 [s]

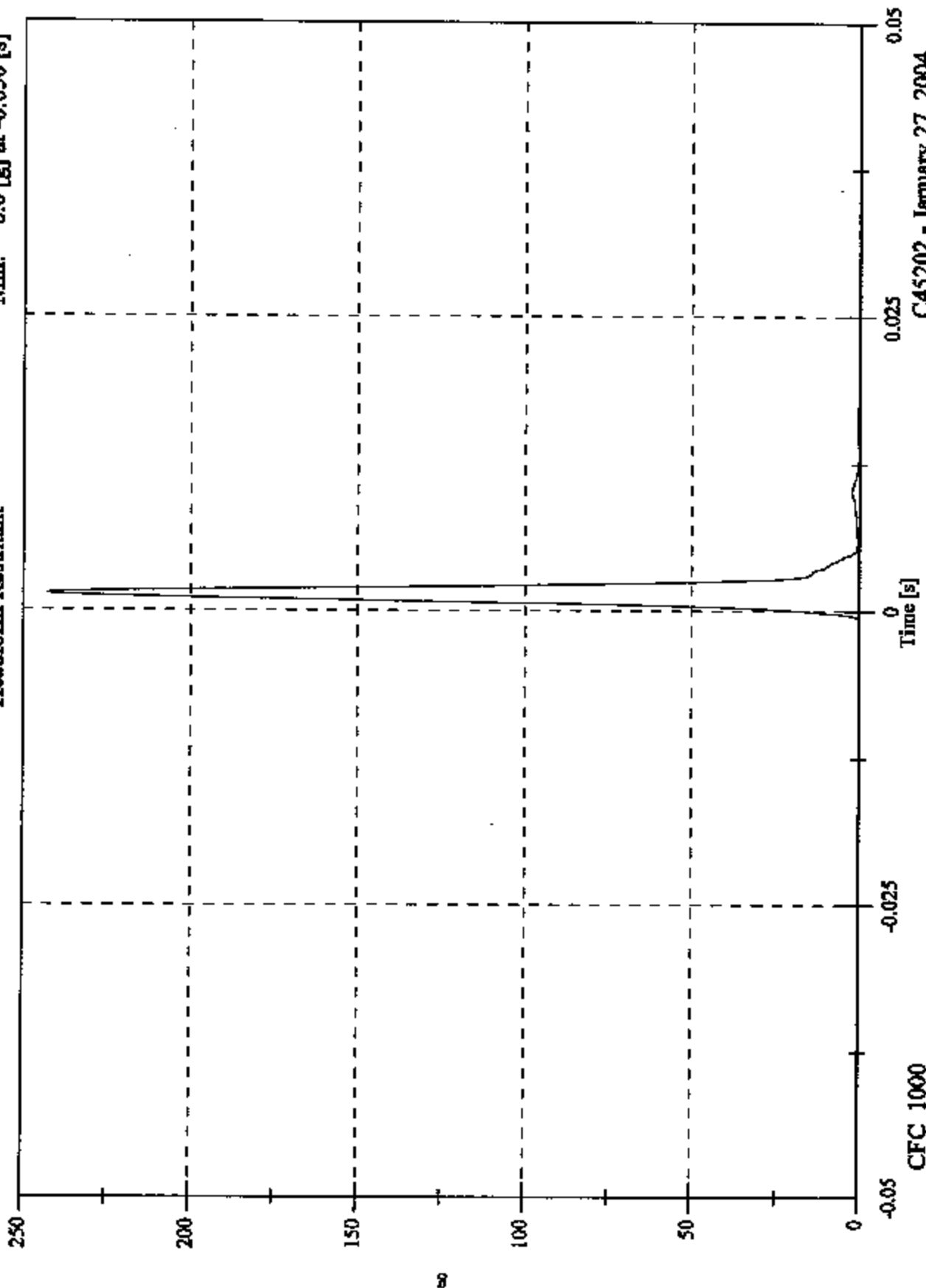


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Headform Resultant

Max: 242.8 [g] at 0.001 [s]
Min: 0.0 [g] at -0.050 [s]



C45202 - January 27, 2004

**PART 57EL
HEAD DROP POST-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS	
SERIAL NUMBER:		0365	
CALIBRATION DATE:		January 27, 2003	
TEST PARAMETER	SPECIFICATION		TEST RESULTS
TEMPERATURE	15°C to 26°C		21
RELATIVE HUMIDITY	10% to 70%		16
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs		249.3
PEAK LATERAL ACCELERATION	15 Gs Maximum		13.3
IS ACCELERATION CURVE UNIMODAL?	YES		YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

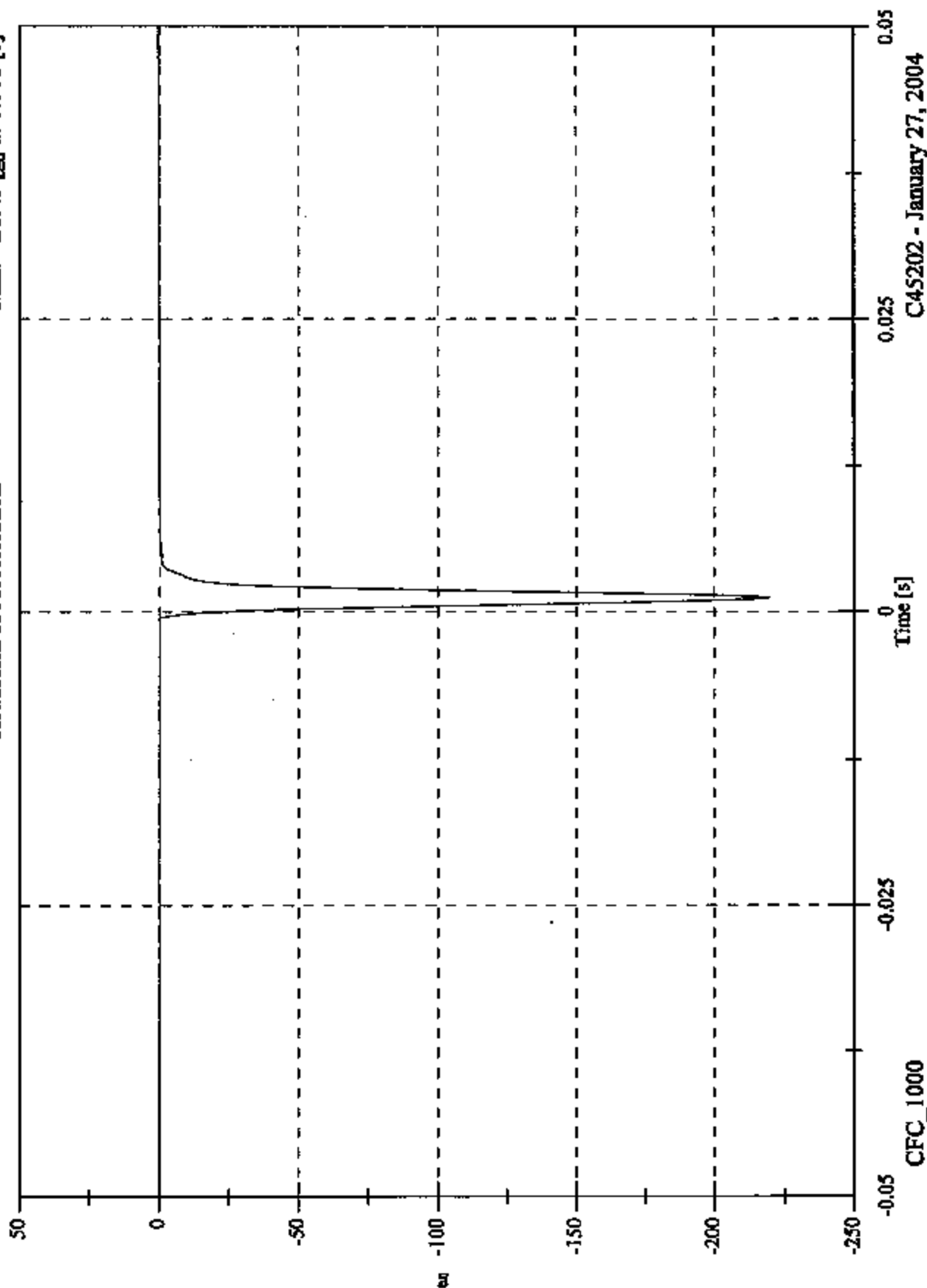
ID. NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J28671	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J32779	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J25834	08/22/03	02/23/04

REMARKS:

FMVSS 201U - Headform Calibration Drops

Max: 0.2 [g] at -0.050 [s]
Min: -219.5 [g] at 0.001 [s]

Headform X Acceleration

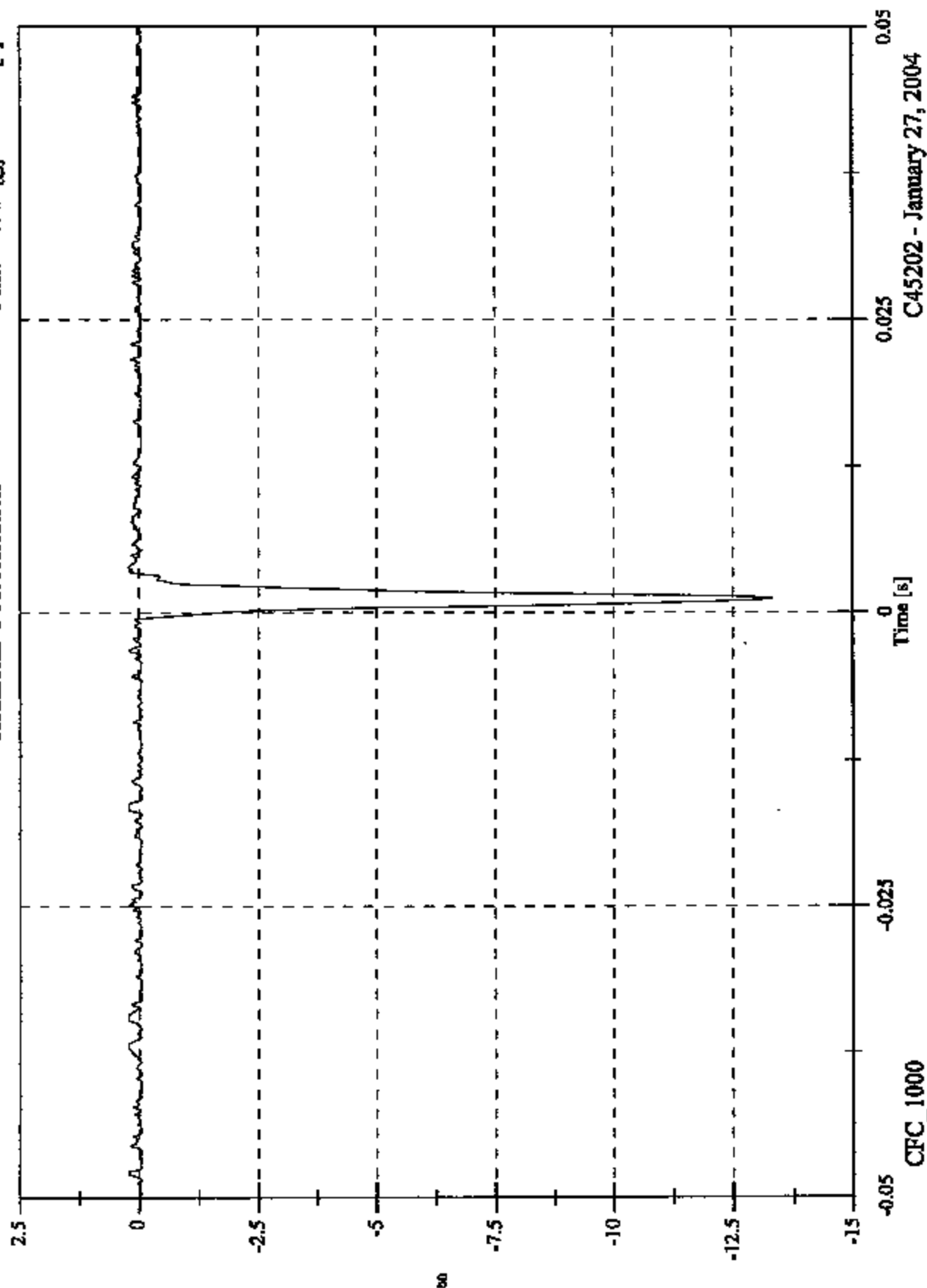


CFC_1000

FMVSS 201U - Headform Calibration Drops

Max: 0.2 [g] at 0.004 [s]
Min: -13.3 [g] at 0.001 [s]

Headform Y Acceleration

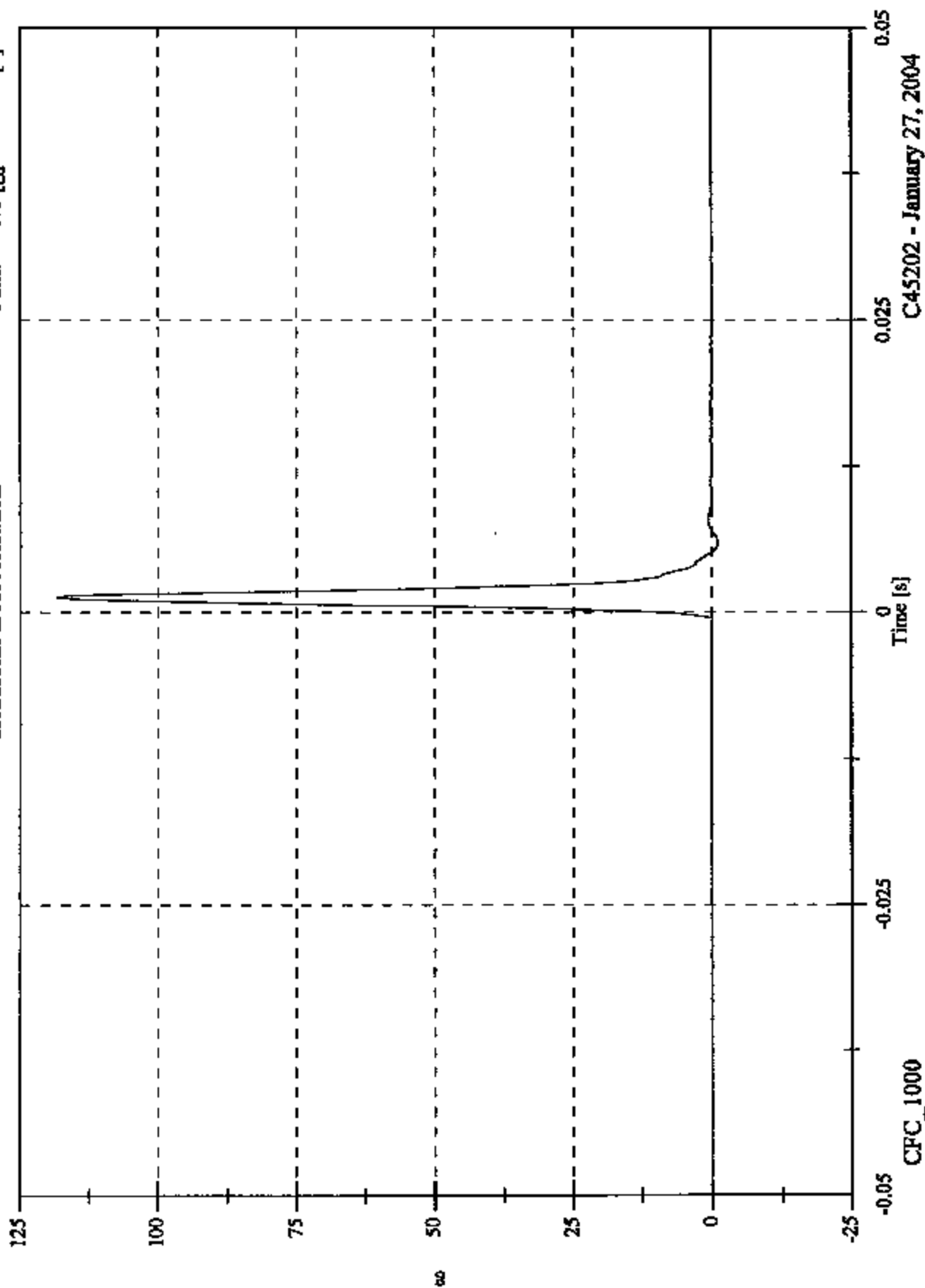


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Max: 118.5 [g] at 0.001 [s]
Min: -1.2 [g] at 0.006 [s]

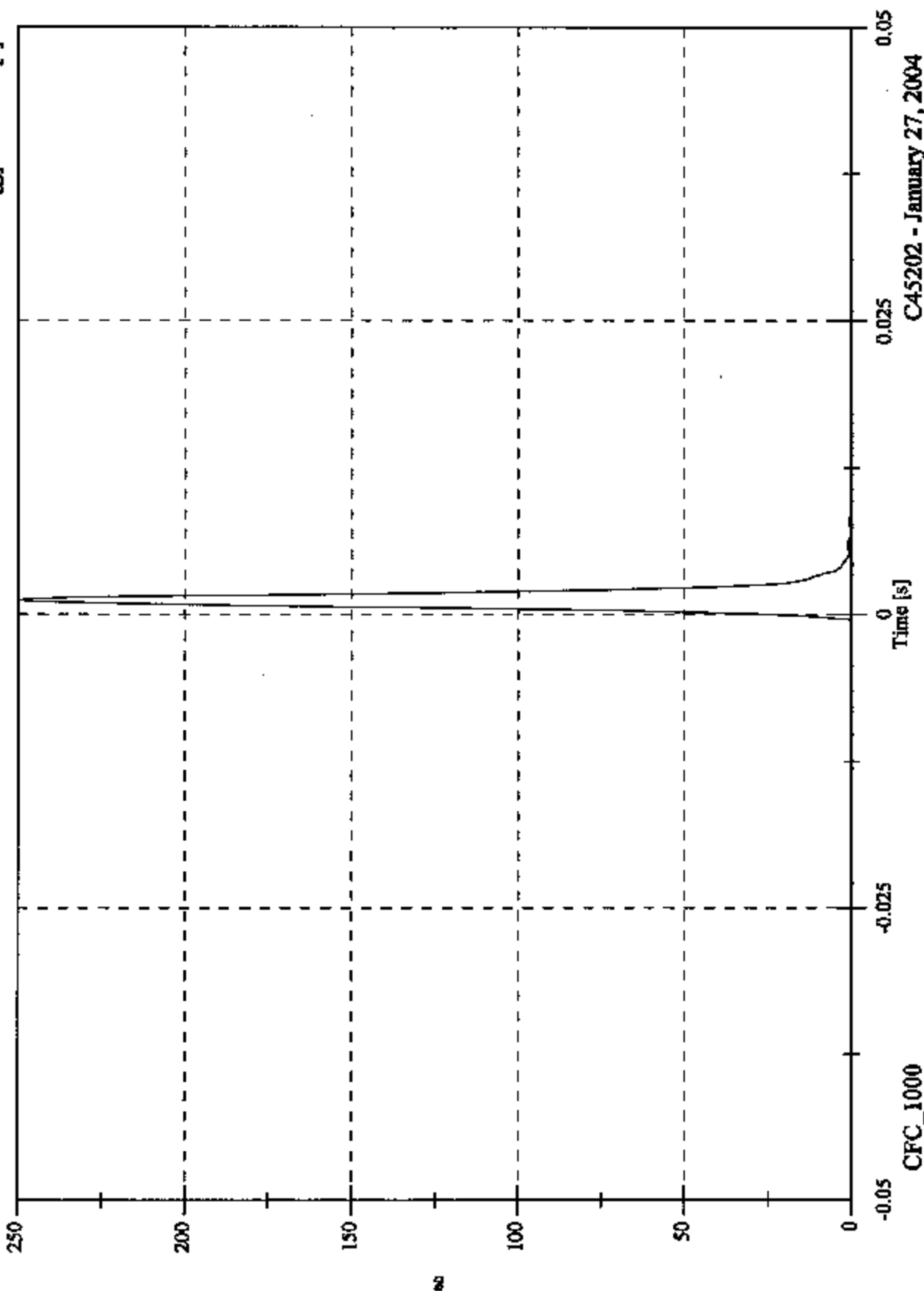
Headform Z Acceleration



FMVSS 201U - Headform Calibration Drops

Max: 249.3 [g] at 0.001 [s]
Min: 0.0 [g] at -0.009 [s]

Headform Resultant



CFC_1000

-0.025

0

0.025

0.05

C45202 - January 27, 2004

**PART 572L
HEAD DROP POST-TEST**

MANUFACTURER:		FIRST TECHNOLOGY SAFETY SYSTEMS
SERIAL NUMBER:		1255
CALIBRATION DATE:		January 27, 2003
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	19°C to 26°C	21
RELATIVE HUMIDITY	10% to 70%	16
PEAK RESULTANT ACCELERATION	225 Gs to 275 Gs	231.1
PEAK LATERAL ACCELERATION	15 Gs Maximum	7.9
IS ACCELERATION CURVE UNIMODAL?	YES	YES

HEAD ACCELEROMETER CALIBRATION INFORMATION

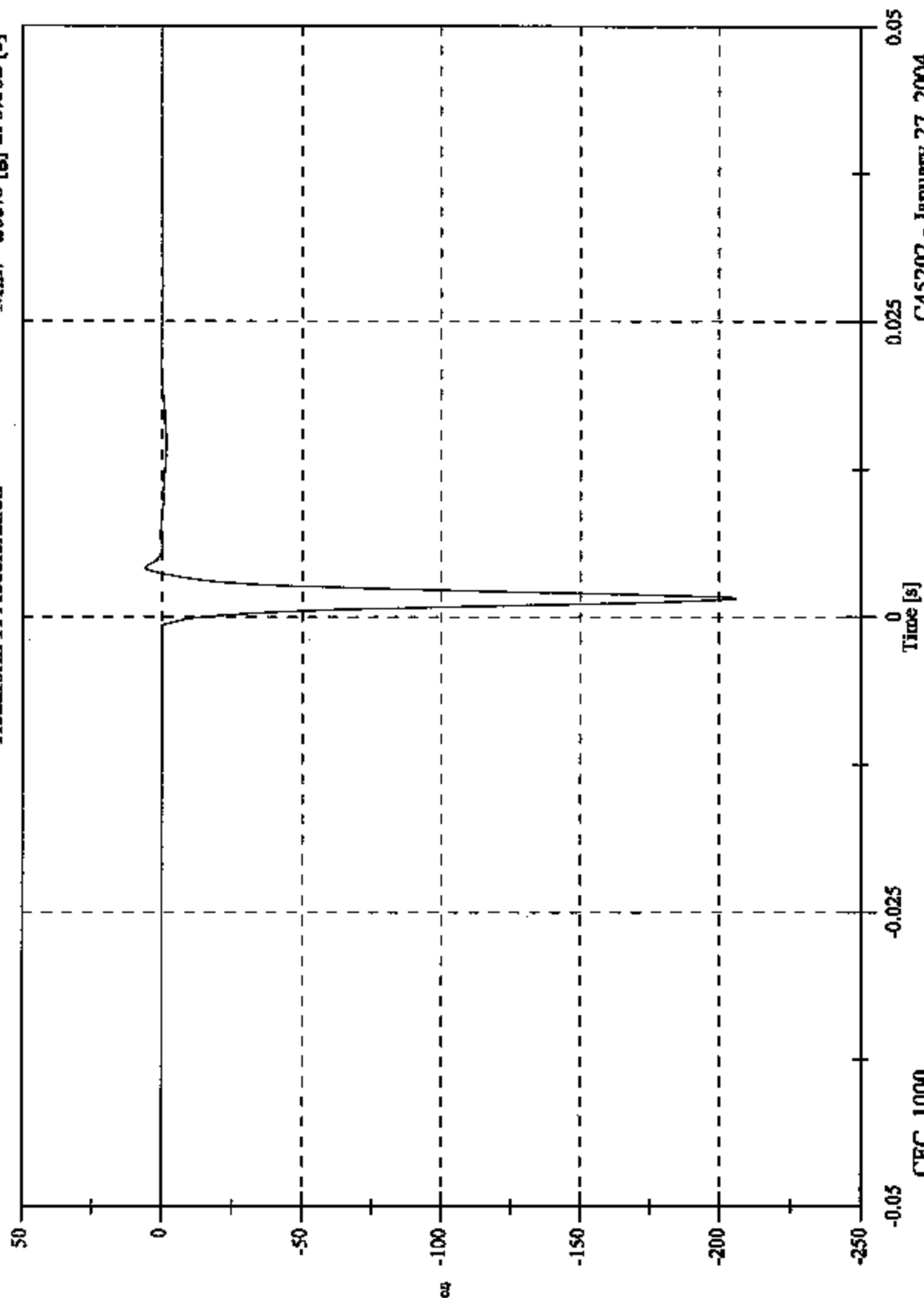
ID NUMBER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	DATE OF LAST CALIBRATION	DATE OF NEXT CALIBRATION
1 - LONGITUDINAL	ENDEVCO	7264-2000T	J41006	08/22/03	02/23/04
2 - LATERAL	ENDEVCO	7264-2000T	J40994	08/22/03	02/23/04
3 - VERTICAL	ENDEVCO	7264-2000T	J41007	08/22/03	02/23/04

REMARKS:

FMVSS 201U - Headform Calibration Drops

Max: 5.7 [g] at 0.004 [s]
Min: -205.8 [g] at 0.002 [s]

Headform X Acceleration



CFC_1000

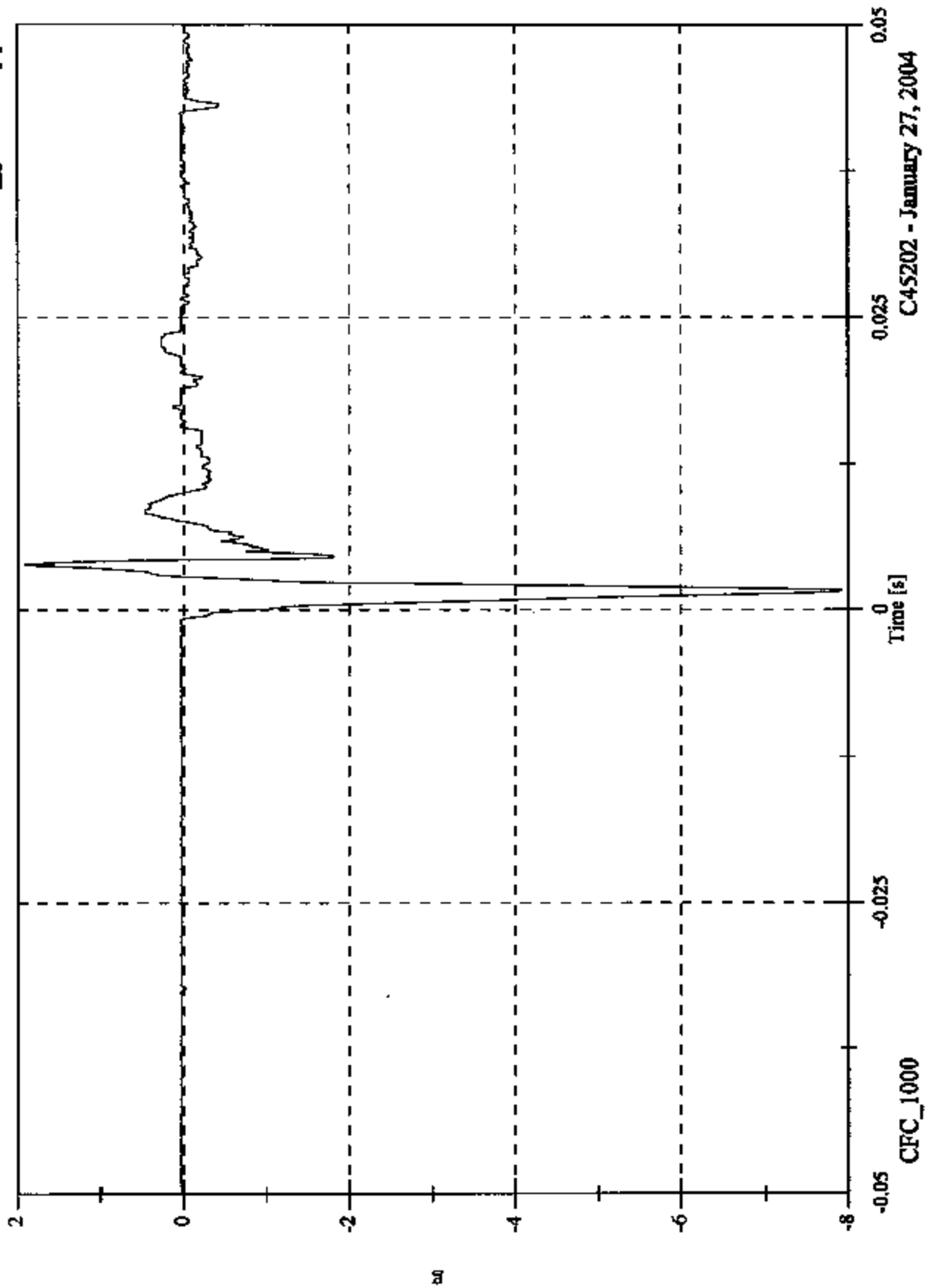
Time [s]

C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Headform Y Acceleration

Max: 1.9 [g] at 0.004 [s]
Min: -7.9 [g] at 0.002 [s]

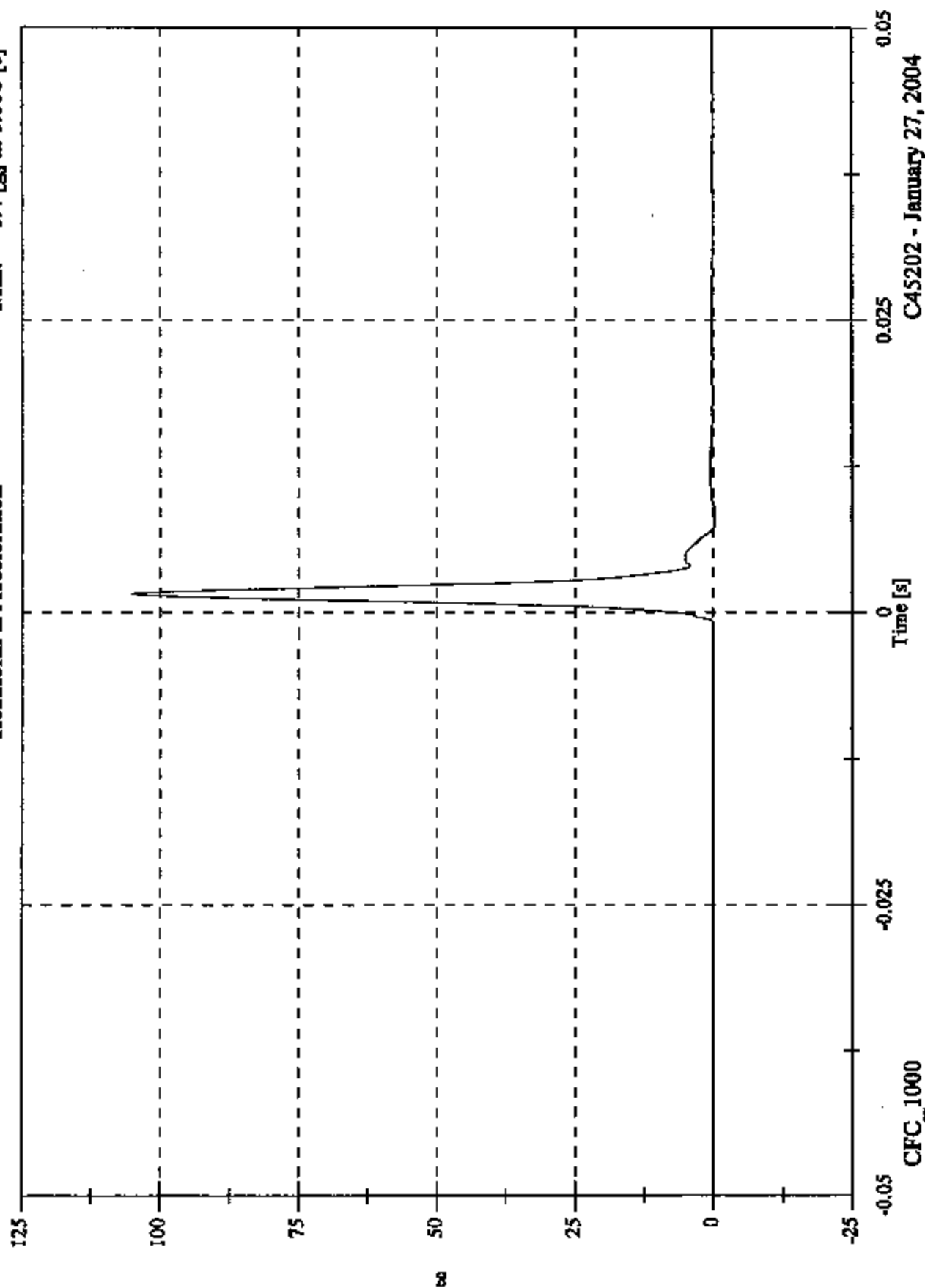


C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Max: 105.0 [g] at 0.002 [s]
Min: -0.4 [g] at 0.008 [s]

Headform Z Acceleration



C45202 - January 27, 2004

FMVSS 201U - Headform Calibration Drops

Max: 231.1 [g] at 0.002 [s]
Min: 0.0 [g] at 0.035 [s]

Headform Resultant

